

AN INVESTIGATION OF THE LONG-TERM EFFECTS  
OF BILINGUAL EDUCATION UPON ACHIEVEMENT,  
LANGUAGE MAINTENANCE AND ATTITUDES

BY

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# TABLE OF CONTENTS

	PAGE
ACKNOWLEDGEMENTS . . . . .	iii
LIST OF TABLES . . . . .	viii
ABSTRACT . . . . .	x
CHAPTER	
ONE INTRODUCTION . . . . .	1
Statement of the Problem . . . . .	1
Delimitations. . . . .	2
Justification. . . . .	2
Assumptions. . . . .	4
Definition of Terms. . . . .	5
Null Hypotheses. . . . .	6
Limitations. . . . .	7
Organization of the Study. . . . .	7
TWO REVIEW OF THE LITERATURE . . . . .	8
Academic Outcomes of Bilingual Education . . . . .	8
Maintaining the Mother Tongue. . . . .	11
Bilingual Education and the Maintenance of Minority Mother Tongues . . . . .	12
Language Attitudes . . . . .	16
Measuring Outcomes of Bilingual Education Programs . . . . .	17
Achievement. . . . .	17
Language Maintenance . . . . .	20
Questionnaires on Language Use and Proficiency. . . . .	20
Language Attitude Questionnaire. . . . .	21
Summary. . . . .	22
THREE PROCEDURES . . . . .	23
Sample . . . . .	23
Selection of the Site. . . . .	24

Instruments and Instrument	
Administration . . . . .	24
Achievement in Reading and	
Mathematics . . . . .	24
Spanish Language Maintenance . . . . .	26
Attitudes Toward the Spanish and	
English Languages . . . . .	29
Collection of Other Data . . . . .	30
Data Analysis . . . . .	31
Achievement in Reading and Mathematics	
Computation . . . . .	31
Language Proficiency and Language Use . .	31
Writing Ability in Spanish and English .	32
Attitudes Toward the Spanish and English	
Languages . . . . .	33
FOUR FINDINGS . . . . .	34
The Schools . . . . .	34
The BISO School . . . . .	35
The Comparison School . . . . .	38
The Junior High School . . . . .	39
The Senior High School . . . . .	40
The Community . . . . .	42
Achievement . . . . .	45
Hypothesis 1 . . . . .	45
Hypothesis 2 . . . . .	46
Hypothesis 3 . . . . .	46
Hypothesis 4 . . . . .	47
Language Maintenance . . . . .	48
Hypothesis 5 . . . . .	50
Hypothesis 6 . . . . .	52
Hypothesis 7 . . . . .	53
Hypothesis 8 . . . . .	54
Attitudes . . . . .	55
Hypothesis 9 . . . . .	55
FIVE SUMMARY, DISCUSSION, CONCLUSIONS AND	
RECOMMENDATIONS . . . . .	57
Summary . . . . .	57
Purpose . . . . .	57
Procedures . . . . .	57
Findings . . . . .	59
Achievement . . . . .	59
Language Maintenance . . . . .	60
Attitudes . . . . .	61
Discussion . . . . .	61
Conclusions . . . . .	65
Recommendations . . . . .	66

BIBLIOGRAPHY . . . . .	68
APPENDICES	
A      LANGUAGE PROFICIENCY QUESTIONNAIRE. . . . .	75
B      LANGUAGE USE QUESTIONNAIRE. . . . .	76
C      DIRECTIONS FOR THE SPANISH ESSAY. . . . .	77
D      DIRECTIONS FOR THE ENGLISH ESSAY. . . . .	78
E      LANGUAGE ORIENTATION QUESTIONNAIRE. . . . .	79
F      PARENT PERMISSION IN ENGLISH. . . . .	81
G      PARENT PERMISSION IN SPANISH. . . . .	82
H      PERMISSION TO CONDUCT RESEARCH. . . . .	84
I      DATA OF THE BISO GROUP. . . . .	86
J      DATA OF THE COMPARISON GROUP. . . . .	96
BIOGRAPHICAL SKETCH. . . . .	108

# LIST OF TABLES

TABLE		PAGE
1	Coral Way Time Distribution Pattern . . . . .	37
2	Numbers of BISO and Comparison Group Students Enrolled in Bilingual Classes in Grades 7, 8 and 9 . . . . .	40
3	Numbers of BISO and Comparison Group Students Enrolled in Bilingual Biology and Spanish Language Arts in Grades 10, 11 and 12 . . . . .	41
4	Growth of Dade County Population, 1960-1980 .	42
5	Change in Dade County Population, 1970-1980 .	43
6	Means, Standard Deviations and <u>T</u> Test of Seventh Grade Reading Scores for the Two Groups. . . . .	45
7	Means, Standard Deviations and <u>T</u> Test of Seventh Grade Mathematics Scores for the Two Groups. . . . .	46
8	Means, Standard Deviations and <u>T</u> Test of Eleventh Grade Reading Scores for the Two Groups. . . . .	47
9	Means, Standard Deviations and <u>T</u> Test of Eleventh Grade Mathematics Scores for the Two Groups. . . . .	48
10	Means, Standard Deviations and <u>T</u> Test of BISO Students' and Parents' Responses on the Language Proficiency Questionnaire. . . . .	49
11	Means, Standard Deviations and <u>T</u> Test of Comparison Students' and Parents' Responses on Language Proficiency Questionnaire . . . . .	49



12	Means, Standard Deviations and <u>T</u> Test of BISO and Comparison Groups' Responses on Language Proficiency Questionnaire . . . . .	50
13	Means, Standard Deviations and <u>T</u> Test of BISO Students' and Parents' Responses on Language Use Questionnaire . . . . .	51
14	Means, Standard Deviations and <u>T</u> Test of Comparison Students' and Parents' Responses on the Language Use Questionnaire. . . . .	52
15	Means, Standard Deviations and <u>T</u> Test of Scores of the Two Groups on the Language Use Questionnaire. . . . .	53
16	Means, Standard Deviations and <u>T</u> Test of the Scores on the Spanish Essays . . . . .	54
17	Means, Standard Deviations and <u>T</u> Test of Scores on the English Essays . . . . .	55
18	Findings of the Chi-Square Test on the Spanish Portion of the Language Orientation Questionnaire. . . . .	56
19	Findings of the Chi-Square Test on the English Portion of the Language Orientation Question- naire. . . . .	56

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Since the revival of bilingual education in the United States in 1963 there has been great pressure upon educational authorities to provide information concerning its effects. With the passage of the Bilingual Education Act in 1968 and its renewals in the following years many millions of dollars have been allotted to bilingual education. With this increasing spending of tax dollars for bilingual education there is a growing demand for these programs to prove their effectiveness. Ironically, a very small percentage of the bilingual education budget is allocated to research.

Of the relatively small amount of research that has been carried out in the field of bilingual education the majority

has been concerned with the effects of bilingual education on cognitive development, school achievement and language development. Often this research is in the form of program evaluations which cover only one year. In order to plan and implement programs that would be most beneficial to the students, the community and society as a whole, bilingual educators should investigate outcomes other than purely academic ones over a longer period than a year or two. Therefore, this study has attempted to evaluate the long-term effects of participation in elementary bilingual programs upon achievement, Spanish language maintenance and attitudes toward the English and Spanish languages.

This study involved one hundred students who were seniors in high school. Fifty attended a Bilingual School Organization elementary school from 1968 through 1974 in Miami, Florida. The other fifty attended a regular all-English elementary school during the same time. The two groups attended the same junior and senior high schools.

Achievement in reading and mathematics was measured by the Stanford Achievement Test at the end of the seventh and eleventh grades. Language maintenance was assessed by two questionnaires and a writing sample in Spanish. The students' attitudes toward the importance of learning both Spanish and English were assessed with a questionnaire. T tests were performed on the scores of the Stanford Achievement Tests and

the two language maintenance questionnaires. The chi-square test of independence was performed on each item of the attitude questionnaire.

The results of the achievement testing suggested no significant differences in reading or mathematics achievement at the seventh grade or in mathematics achievement in the eleventh grade. However, a significant difference was revealed in reading achievement at the eleventh grade with the treatment group surpassing the control group.

In the area of Spanish language maintenance there was a significant difference between the two groups in their proficiency in Spanish but not in their use of Spanish. The treatment group was found to be more proficient in writing Spanish.

The chi-square procedure revealed no significant differences between the groups in their attitudes toward learning both Spanish and English.

The results of the investigation are discussed and conclusions drawn. Recommendations are made for the practitioner and for further research.

## CHAPTER I INTRODUCTION

Of the relatively small amount of research that has been carried out in the field of bilingual education the majority has been concerned with the effects of bilingual education on cognitive development, school achievement and language development. Often this research is in the form of program evaluations which usually cover only one year. In order to plan and implement programs that would be most beneficial to the students, the community and society as a whole, bilingual educators should investigate outcomes other than purely academic ones over a longer period than a year or two. Therefore, this study will attempt to evaluate the long-term effects of participation in elementary bilingual programs upon achievement, Spanish language maintenance, and attitudes toward the Spanish and English languages. In addition, the community in which the subjects live will be described in order to provide a background for this bilingual program.

### Statement of the Problem

The problem under investigation is to determine whether participation by Hispanic students in bilingual schooling in

grades one through six in Dade County, Florida, promotes higher achievement in reading and mathematics skills and maintenance of the Spanish language than participation in the regular English curriculum. It also will be determined whether such participation influences the attitudes toward the Spanish and English languages of the Hispanic students in the bilingual programs.

### Delimitations

This study will be limited to 100 Hispanic students who are seniors in high school. Fifty of the subjects will have attended the first through sixth grades at a selected Bilingual School Organization (BISO) program from 1968 through 1974. During the same period the other fifty students will have attended the first six grades at a school with a regular English language curriculum.

Any generalizations which can be made from this study will be limited to the population from which the sample was taken.

### Justification

Since bilingual education's "rebirth" in the United States in 1963 there has been great pressure upon educational authorities to supply information on the effects of bilingual education and the use in education of languages other than English. When the Bilingual Education Act (Title VII) was launched in 1968, it was undertaken largely as an act of faith, with little research to support it (Troike, 1978). Since 1968 approximately \$997,000,000 have been allotted for Title VII needs. With this increasing spending of tax dollars for bilingual education

there is a growing demand for these programs to prove their effectiveness. Ironically, a very small percentage of the bilingual education budget is allocated to research.

Much of the research that is done is found to be of very poor quality. In reviewing 108 evaluation projects and 76 research studies for the Northwest Regional Education Laboratory, Zappert and Cruz (1977) rejected all but three of the evaluations and twelve of the studies. Among the faults of these studies and evaluations were the lack of control for socioeconomic status, inadequate sample size, no baseline data, no control group, no control for initial language dominance, significant differences in teacher qualifications and insufficient statistical information.

From the worthwhile evaluations and studies that Zappert and Cruz do cite it is clear that good bilingual programs can meet the educational needs of students of non-English mother tongues. Therefore, it is important that all bilingual programs be improved to the point that they will be beneficial to the children who participate in them.

Cohen (1975b) stresses that the language situation of the community should be investigated as part of bilingual program planning. He states that there has not been a truly sociolinguistic study of any bilingual school program, although this type of study would help programs to better meet the needs of the participants. *HW?*

Researchers are becoming more aware of the value of longitudinal studies to bilingual education. Studies by Rosier and

Farella (1976) with the Navajo, and Leyba (1978) with Spanish speakers in Santa Fe are important in suggesting that bilingual instruction may have a cumulative effect which may not be shown by short-term evaluations. Longitudinal studies are necessary to determine this effect.

Both Cohen (1975a) and González (1977) urge that longitudinal studies be carried out to assess the effect of bilingual schooling on children's language behavior over a period of time. They call for studies which systematically relate the child's language behavior out of school and to the language patterns of parents and siblings.

Cohen and Rodríguez-Brown (1976) and González (1977) ask that concerned researchers carry out longitudinal studies on the effects that participation in bilingual schooling has in such areas as subsequent educational experience, occupational choice and occupational success.

#### Assumptions

1. The information gathered is representative of the population sampled.
2. The opinions expressed in the essays by the students will be their own.
3. The Stanford Achievement Test is an adequate measure of reading and mathematics achievement.



### Definition of Terms

The following terms are defined in relation to their use in this study.

BISO. An organization for instruction in elementary schools which, in addition to the regular instructional program in the English language, offers all four components of Dade County's bilingual education program: ESOL, Spanish-S, Spanish SL and CCS. These terms are defined below. They are taken from Bilingual Schools for a Bicultural Community by Mackey and Beebe (1977).

ESOL. A program designed for students of all ages whose native language is other than English. It is a full language arts and culture program.

Spanish-S. A language and culture program designed to teach Spanish language arts skills to any Spanish-speaking student.

CCE-S. The regular curriculum courses offered in the English language to Spanish-speaking students.

CCS-S. A subject area program (or segment of a program) of the regular school curriculum offered in Spanish.

Hispanic. A person of Central or South American or other Spanish culture or origin regardless of race.

Spanish language maintenance. At the individual level it is the continued use of the four language skills: understanding, speaking, reading and writing in Spanish. For this study the use of Spanish will be measured in the domains of family, neighborhood, education and occupation.

Reading achievement. This is the measure of the knowledge and ability to understand passages on the paragraph meaning section of the Stanford Achievement Test for second graders and the reading section of the Stanford Achievement Test for seventh and eleventh graders.

Mathematics achievement. This is the measure of the knowledge and ability to work problems in the mathematics computation section of the Stanford Achievement Test at the second, seventh and eleventh grades.

#### Null Hypotheses

1. There is no significant difference between the BISO group and the Comparison group in reading achievement as measured by the reading portion of the Stanford Achievement Test at grade seven.
2. There is no significant difference between the BISO group and the Comparison group in mathematics achievement as measured by the mathematics portion of the Stanford Achievement Test at grade seven.
3. There is no significant difference between the BISO group and the Comparison group in reading achievement as measured by the reading portion of the Stanford Achievement Test at grade eleven.
4. There is no significant difference between the BISO group and the Comparison group in mathematics achievement as measured by the mathematics computation portion of the Stanford Achievement Test at grade eleven.
5. There is no significant difference between the BISO group and the Comparison group in degree of Spanish language proficiency as reported on the Language Proficiency Questionnaire.
6. There is no significant difference between the BISO group and the Comparison group in Spanish language use as reported on the Language Use Questionnaire.

7. There is no significant difference between the BISO group and the Comparison group in writing ability in Spanish as measured by an essay written in Spanish.
8. There is no significant difference between the BISO group and the Comparison group in writing ability in English as measured by an essay written in English.
9. There is no significant difference between the BISO group and the Comparison group in their attitudes toward learning Spanish and English as reported on the Language Orientation Questionnaire.

### Limitations

One limitation of this study was the inability to assure that the two groups in the study were comparable in achievement levels and language dominance at the beginning of their schooling. It was not possible to compare their Stanford Achievement Test scores at the second grade because a majority of both groups were unable to take the test because of their limited ability in English. Both groups reported themselves to be dominant in Spanish upon entering school.

### Organization of the Study

Chapter Two contains the Review of the Literature. Chapter Three describes the Procedures followed in the study. The Findings are reported in Chapter Four. The Summary, Discussion, Conclusions and Recommendations are given in Chapter Five.

## CHAPTER II REVIEW OF THE LITERATURE

Chapter II reviews research and literature in six areas that are related to the topic under investigation: (a) academic outcomes of bilingual education, (b) the importance of maintaining the mother tongue, (c) bilingual education and the maintenance of minority mother tongues, (d) language attitudes, and (e) instruments for measuring outcomes of bilingual education programs.

### Academic Outcomes of Bilingual Education

This review of evidence for the effectiveness of bilingual education programs includes both research studies and evaluations of bilingual programs. Presented first are studies which suggest positive academic outcomes of bilingual education programs. Among these is a longitudinal study by Richardson (1968) of the Coral Way Elementary School in Miami. The results show no difference in the relative performance in the language arts and in arithmetic of third grade native English- and Spanish-speaking pupils in an experimental bilingual program compared with the performance of native English and Spanish speakers in a regular school program. More recent evaluations by the Dade

County Office of Management and Educational Audits (1977) indicate as favorable results for the Coral Way program as this early study.

In a study of the St. John Valley, Maine bilingual project, Dube and Herbert (1975) found that after five years French-speaking bilingually-trained students out-performed French-speaking control students in English language skills and mathematics. In addition, the students in the bilingual program achieved average or above-average stanines in all subject areas on the Metropolitan Achievement Test in grades one through four.

A longitudinal study of three elementary bilingual programs which were begun in 1970, was carried out by the Santa Fe Public Schools (1978). The treatment and control groups were located within the same schools. The results, which were scores on the Metropolitan Achievement Test in reading and mathematics, showed that neither the treatment nor the control group did better than the national norm in reading. However, the treatment group did better than the control group. In the mathematics section the average scores for the treatment groups were above those of the control group. The most promising results were for the group which had been in the bilingual program from the second through sixth grades for they consistently scored higher than the national average in both sections.

Plante (1977) found successful results in a study of a Spanish bilingual program in New Haven, Connecticut. The experimental group consisted of 45 Spanish dominant children,

while the control group had 27 Spanish dominant children. Both groups were K-3. The experimental group achieved greater growth in Spanish and English reading as measured by the Metropolitan Achievement Test. Only children in the experimental group tested at grade level or above.

Cohen (1975a) found less promising results with regard to reading achievement in the longitudinal studies of a bilingual program at Redwood City. Three bilingually-trained classes of students scored significantly below the comparison group in Spanish reading--even though the later had not received instruction in Spanish reading. One possible reason for these results was thought to be that the bilingually-trained students had been introduced to reading in Spanish and English at the same time, a condition that may retard reading competency in both languages.

Another study which produced less than favorable results concerning the academic outcomes of bilingual education programs was that conducted by the American Institute of Research (Danoff, 1978). The AIR study reports that students in Title VII funded Spanish/English bilingual programs performed at a lower level in English language arts than non-Title VII students and at the same level in mathematics as non-Title VII students. However, the findings of the AIR study have received a great deal of criticism because the research was not carried out in the correct manner. More quality research is necessary before sound conclusions can be drawn concerning the long-term effects of bilingual education on academic achievement.

### Maintaining the Mother Tongue

The most obvious anomaly--or absurdity--of our educational policy regarding foreign language learning is the fact that we spend perhaps a billion dollars a year in the United States to teach the languages--in the schools, the colleges and universities, the Foreign Service Institute, the Department of Defense, AID, USIA, CIA, etc. (and to a large extent to adults who are too old ever to master a new tongue)--yet virtually no part of the effort goes to maintain and develop the competence of American children who speak the same languages natively. There are over 4 million native speakers of French or Spanish in our country and these two languages are the two most widely taught, yet they are the ones for which our government recognizes the greatest unfilled need (at levels, for example, of the Foreign Service of the Department of State and the program of lecturers and technical specialists sent abroad under the Fulbright-Hays Act). (Gaarder, 1977)

Statements such as this have been included in every rationale supporting bilingual education. Fishman (1972) states that "we must try to preserve mother tongues while minority people learn English, for these languages are important to our external relations. They are an important natural resource" (p. 19).

On the individual level, research of Long and Padilla (1970) suggests that Spanish-American children and adolescents can learn English better and adjust more comfortably to America if they are allowed to keep intact their linguistic and cultural ties to the Spanish-speaking world.

Lambert (1977) states that members of any minority language community must consolidate and deepen their control of the native language and branch into the dominant language only when full competence in the home language is assured. In this way

additive bilingualism can be attained with all the benefits that go along with it. An example to support this theory was reported by Dube and Herbert (1975). It was an experiment which took place in St. John Valley, Maine, where 85 percent of the families have kept French as the home language, often along with English. In the experiment several schools were permitted to use French for one-third of the elementary curriculum. As a control a second set of schools with comparable children offered all of their instruction in English. At the end of five years the children in the partial French schools outperformed the control group in English language skills and academic content. At the same time they had learned to read and write in French.

In addition to these academic benefits Lambert, Giles, and Picard (1975) report that there is a change in the self-views of these French-trained youngsters. Their research shows that they begin to take great pride in being French and in realizing that their language is as important a medium for instruction as English.

#### Bilingual Education and the Maintenance of Minority Mother Tongues

The literature dealing with the effects of bilingual education upon the maintenance of minority mother tongues report both positive and negative outcomes. The outcomes seem to depend upon the type of bilingual program that is implemented.



Most bilingual programs in the United States have been of the compensatory or transitional type. Kjolseth (1973) and Gaarder (1977) suspect that the most probable outcome of this type of program for minority group children is loss of native mastery of the mother tongue. Furthermore, they do not see complete mastery of English occurring in situations of school-based language learning for disadvantaged groups. These predictions by Kjolseth and Gaarder have not been empirically validated.

A study of three groups of Spanish speakers by Laosa (1975) suggests that language maintenance may be occurring with one group but not with the other two. The subjects of the study were 295 bilingually-schooled first, second and third graders. There were 100 Mexican-American children in Austin, Texas, 95 Puerto Rican children in the Bronx and 100 Cuban-American children in Miami. Administering language use questionnaires and interviews to the teachers and parents of the children concerning the children's language behavior Laosa found that the Puerto Rican children were using Spanish much more at home, in school and with friends than either the Cuban-Americans or the Mexican-Americans. The Mexican-Americans were experiencing the greatest amount of language shift. Although it was reported that all three groups were in bilingual programs, the amount of Spanish used in the programs for the Puerto Rican children was much more than that used with either the Mexican-Americans or the Cuban-Americans.

This difference could account for the disparity in the language maintenance findings for the three groups.

In an evaluation of a French immersion program in Ottawa in which English-speaking Canadian children receive all their instruction in French, Barik and Swain (1975) report that after three years in the programs the children perform satisfactorily in French although not on par with French-speaking peers. Cohen (1975a) found similar results for English-speaking children who had been immersed in Spanish programs since kindergarten.

Richardson (1968) did an evaluation of certain aspects of achievement in the Coral Way Elementary maintenance bilingual program over a period of three years. She found that both the English-speaking and Spanish-speaking children had made impressive gains in learning their second languages.

Cohen (1975a) carried out a longitudinal study of the Redwood City Bilingual Education Project which is also a maintenance bilingual program. The subjects were 20 bilingually schooled and 22 conventionally-schooled Mexican-Americans. At the end of two years it was found that the students in the bilingual programs continued to use Spanish more than English, while comparison students schooled only in English shifted to greater use of English.

From the mixed results of the studies cited here it can be seen that the question of whether bilingual education programs can promote the maintenance of marked or non-dominant languages remains to be answered. Fishman (1977) warns that

fifteen years of research in the United States, Ireland, Wales, Israel and elsewhere have demonstrated that the job of maintaining the use of second languages is too great for schools. He finds in the United States that once minority people become well educated in English most of them will probably find English the more helpful language in our society and thus, move away from the use of their native languages. He says that at best schools can be an ally to culturally alert people who want to maintain their mother tongues. He adds that maintenance of these languages will also require a striving on the part of the unmarked community to set up enrichment bilingual programs.

In a framework for research in sociolinguistics Gaarder (1971) lists 22 sociocultural factors affecting the maintenance or shift of Spanish in the United States. Among the factors are the following:

1. Size and homogeneity of bilingual group
2. Historic priority of bilingual education
3. Access and renewal from a hinterland
4. Reinforcement by in-migration and immigration
5. Stability of the three generation extended family
6. Order and age of learning the two languages
7. Relative proficiency in both languages
8. Specialized use by domains and interlocutors
9. Status of the bilingual groups
10. Attitudes toward cultural pluralism
11. Attitudes toward each language

It is often repeated in the literature that there is a great need for more sociolinguistic studies in the area of bilingual education's effects on language maintenance (Cohen, 1975a; Kjolseth, 1973; Gaarder, 1977).

### Language Attitudes

There are two important roles of language attitudes which are discussed in this section. One concerns the importance of language attitude in second language acquisition. The other focuses on the attitudes toward one's mother tongue. There were both positive and negative outcomes from these studies.

Among the positive results concerning language attitudes are those found by Peal and Lambert (1962) with French-speaking Canadian children. When the children were given the opportunity to become bilingual they developed attitudes that were as charitable toward the English-speaking Canadians as toward their own cultural group. The same conclusion was found by Lambert and Tucker (1972) with English-speaking Canadians who had their elementary instruction in French.

Research by Gardner and Lambert (1959) and Feenstra (1968) has shown that the rate and efficiency of second language learning can be affected by the learner's attitudes and social motivation. Lambert and Gardner (1972) have shown that the language learner's attitudes toward the "other" ethnolinguistic group can play a large part in determining success in acquiring that group's language. Thus, students with positive attitudes toward the other group will make better progress in learning their language than students who are prejudiced or suspicious of the other group.

Concerning the attitude toward one's mother tongue Saville and Troike (1975) state that teaching children in their own language will give them a greater sense of respect for their

language and, therefore, themselves. This in turn will enhance their learning capabilities in all areas. In support of this statement Cohen (1975a) in studying the Redwood City bilingual program found that the self-concepts and attitudes toward their own language and culture were more positive for the Mexican-American children being schooled bilingually than for the control group.

All of the findings in the area of language attitudes are not promising. In one study of bilingually-schooled elementary level students in Jerusalem Cooper and Fishman (1977b) found that exposing young native Hebrew-speaking children to English can have negative impact on their mother tongue attitudes. The cause of this was believed to be the small-power-language vs. the large-power-language contrast. It was believed that the children began to view their native language "as just a 'school thing' rather than as a living organism in a living community" (Mackinnon, 1977).

### Measuring Outcomes of Bilingual Education Programs

#### Achievement

The most practical instrument for measuring achievement in reading and mathematics in this study was the Stanford Achievement Test because it is given to all the students in the district at certain grade levels. The Stanford Achievement Test is "a wide-range measurement of the three R's--reading, English and mathematics" (Gardner, Callis, Merwin and Madden, 1973). It is independent of the exact curriculum of a school.

As a consequence of measuring Spanish language maintenance in this study English writing ability was also assessed. Kuhlman (1980) asserts that with the national focus on basic skills of all students the assessment of writing skills of bilingual students is more important than ever before. Yet, as Merrill (1976) states, very little research on the writing skills of Hispanics has been carried out. The majority of evaluations that have been done on this are based on expected proficiencies of monolingual English speakers.

The two methods generally used to assess writing ability are indirect, which uses an objective test, and direct, which is actual writing (Braddock, Lloyd-Jones and Schoer, 1963). The most common criticism of the objective test is that it does not require the examinee to select and organize his own words and to compose sentences and paragraphs, yet many educators consider it an adequate predictor of writing ability (Noyes, 1963).

For this study the direct method of essay writing was used. Among those researchers who attest that essay writing is a good method of assessing writing ability are White (1978), Powills (1979), Huntley (1979) and Hudson and Veal (1979). A criticism of writing essays has been that there is disagreement among graders. Yet many researchers report high correlations among scores arrived at by essay graders. Noyes (1963), Buxton (1959) and Kincaid (1953) report reliabilities between .77 and .91.

One method of directly assessing writing skills which has many proponents is the holistic scoring technique. According to Kuhlman (1980) and Smelstor (1978) holistic scoring offers fast and reliable evaluations and is an effective diagnostic tool. Smelstor also points out that holistic scoring concentrates on the positive aspects of students' writing.

When using the holistic scoring technique it is important to follow certain procedures. Steele (1979) suggests that in order to avoid variation in the nature of the responses a standardized task should be assigned to all the students. Also, a set amount of time should be allotted for the completion of the essays. Smelstor (1978) states that the essays should be typewritten in order that handwriting not influence a grader's judgement. Furthermore, the papers should be anonymous in order to eliminate bias for or against the student.

In the holistic scoring procedure there are two or three graders. Cohen (1979) suggests that two persons read the essays. Steele (1979) found that increasing the number of scorers beyond two does not greatly enhance reliability.

Powills (1979) describes the scoring process as follows: prior to giving the essays to the scorers some papers would have been selected as representative of the four to five levels of writing skill for that group of papers. These essays serve as models in judging the rest. The scorer reads all the essays, judging them against the others, and rank-orders them. At this point all the essays would be given to the next scorer, who is unaware of how the previous scorer judged them.

Although, as Powills (1979) states, holistic scoring involves judging a composition for the whole impression it creates, Smelstor (1978) suggests the use of an analytic scale which is a device which lists the prominent features or characteristics of writing in a particular mode. The list of features usually ranges from four to ten with high, medium and low points on a scoring line. In their research with Hispanic children Lewis and Lewis (1965) used an analytic scale in judging writing ability. Some of the writing characteristics which were judged included the following: verbal output, range of vocabulary, accuracy of spelling and quality of sentence structure.

#### Language Maintenance

Traditionally sociologists have employed reports of language use and language proficiency in order to assess bilinguality (Weinrich, 1953; Macnamara, 1967). In order to strengthen measurement validity the language use and proficiency instruments could be correlated with other measures that demonstrate language ability. Fishman and Terry (1971) explained that validation of self-report measures may be possible through correlations with criteria such as tasks of listening comprehension, word naming, and other linguistic elicitation procedures.

#### Questionnaires on Language Use and Proficiency

Two instruments used by Cohen (1975a) in his sociolinguistic study of the Redwood City bilingual project seemed appropriate for assessing the bilinguality of the students. They are the Language Use Questionnaire and



the Language Proficiency Questionnaire. Both of these instruments were developed by Fishman (1964) and modified by Cohen. There had been a similar self-report questionnaire developed by Macnamara (1967) which assessed the language skills of listening, speaking, reading and writing in both languages of a speaker. A major innovation in the Fishman model was the addition of the domain dimension to the measurement of bilingualism. Fishman (1972) defines domain as a cluster of social situations which are typically constrained by a common set of behavior rules. The domains may vary but they usually include family, neighborhood, religion, education and occupation. The importance of assessing language skills in the different domains lies in the fact that if it were found that a bilingual group of people were using both languages for all domains a diglossic situation would cease to exist. This would indicate a shift toward the dominant language.

#### Language Attitude Questionnaire

The Language Orientation Questionnaire based on that of Gardner and Lambert (1959) and used by Cohen (1975a) at Redwood City is designed to determine why one thinks it is important to know Spanish and English. The reasons are of two types: instrumental (e.g. useful in getting a job) and integrative (e.g. enables them to maintain friendships). In Cooper and Fishman's (1977a) studies of Hebrew-speaking students learning English they found a correlation between rates of use and proficiency in a language and more instrumental reasons for learning the language. It is not known which is the cause.

Summary

Five areas of research and literature concerned with the assessment of the long-term effects of participation in bilingual education programs have been reviewed. The first section reported mainly positive academic outcomes of bilingual education programs. The second reviewed the consequences of maintaining one's minority mother tongue and indicated that they are all beneficial. In the third section, which discussed the effects of bilingual schooling upon the maintenance of minority languages, both positive and negative results were cited. In the fourth area, which deals with the effects of bilingual programs on language attitudes, the majority of the studies suggested positive outcomes. The fifth area dealt with the instruments used to measure the outcomes of bilingual education programs.

Through this review the call for longitudinal studies to help in the planning and implementation of bilingual programs was repeated by linguists, educators and other scholars. It is hoped that this research will help fill that gap and thus benefit bilingual education in a small way.

### CHAPTER III PROCEDURES

The procedures used in this investigation are presented in this chapter. The description of the procedures is divided into the following sections: (a) sample, (b) selection of the site, (c) instruments and instrument administration, (d) collection of other data, and (e) data analysis.

#### Sample

A sample of approximately 100 students was chosen from a population of seniors at a selected high school in Miami. All were Hispanic students whose native language is Spanish. Fifty of the subjects attended a BISO (Bilingual School Organization) school from first through sixth grades. These students were labeled the BISO group in the study. The other fifty subjects attended a regular all-English school for their first six years of schooling. They were called the Comparison group.

The following process was used to make the two groups. After making separate lists of all Hispanic students of each type who agreed to be part of the study their names were placed on cards. The cards were shuffled and a card drawn out. This was done repeatedly until there were fifty in each group.

### Selection of the Site

The selection of the site was a very important part of the study. One important fact which led to the choice was that the bilingual program at Coral Way Elementary School, begun in 1963, in Dade County is among the oldest in the United States. This made it possible to choose a sample of high school seniors who had participated in bilingual education programs from the first through sixth grades.

Another important consideration in choosing the site was that the school age population of Spanish speakers is constantly increasing in Dade County. Due to the influx of Cuban refugees to Miami in the first part of 1980, there were twelve thousand new Spanish-speaking students in the public schools in the fall of that year.

One further reason for choosing Dade County was that no study similar to this one had been done there. In fact, there has been little research in the bilingual programs of Dade County.

### Instruments and Instrument Administration

This study analyzed the effects of participation in bilingual programs in three distinct areas: achievement in reading and mathematics, Spanish language maintenance, and attitudes toward the Spanish and English languages. In addition, the community in which the subjects live was described. Therefore, the instruments for each area are presented separately.

#### Achievement in Reading and Mathematics

In order to assess achievement in reading and mathematics, raw scores from the Stanford Achievement Test were obtained.

Although percentile scores would have been preferred for the statistical analysis they were not available. The Stanford Achievement Test is described by its developers as a "wide-range measurement in the 'three R's'--reading, English, and mathematics--at any time after instruction in these fundamental academic skills has been substantially completed" (Gardner, Callis, Merwin and Madden, 1973).

The second grade Stanford Achievement Test scores were obtained for both groups to serve as a baseline. These scores were for paragraph meaning, which is reading, and mathematics computation. The analysis of them could not be done because a majority of the subjects in both groups did not take the Stanford Achievement Test that year due to their very limited proficiency in English. It was necessary to know the achievement level of the two groups at the end of the treatment which was their education in grades one through six. Therefore, their seventh grade scores on the reading and mathematics computation sections of the Stanford Achievement Test were obtained.

In order to assess the effects of the treatment upon the achievement of the two groups five years later at the end of high school the scores on the reading and mathematics computation sections of the Stanford Achievement Test were recorded. This test was given in the eleventh grade.

The scores for the second, seventh and eleventh grade Stanford Achievement Test were obtained from the students' cumulative folders. It was necessary to obtain parental permission to have access to these records.

### Spanish Language Maintenance

Three methods were employed to assess Spanish language maintenance. They were a Spanish language proficiency questionnaire, a Spanish language use questionnaire, and a writing sample.

The Language Proficiency and Use Questionnaires--The Language Proficiency Questionnaire consists of four questions adapted from a language census developed by Fishman and Terry (1971). The questions ask whether a person is able to understand a conversation in Spanish, participate in one, read a newspaper in Spanish, and write a letter in Spanish. Response choices are "yes," "a little" and "no." The four items were combined into an index of language proficiency with "yes" having a value of 2, "a little," 1, and "no," 0. The maximum of eight would indicate ability in the four language skills: listening, speaking, reading and writing in Spanish. A copy of the Language Proficiency Questionnaire is in Appendix A.

The Language Use Questionnaire was taken from the language census of Fishman and Terry (1971). It consists of nine questions concerning language use patterns by domains. Specifically, it asks what language the subjects use with members of their families, with fellow students at school, with peers in the neighborhood, with people at work, and for their church service. The response choices are "Spanish," "English," or "Both." "Spanish" carries a value of 2, "Both" has a value of 1, and "English" is 0. These nine values will be combined into

an index of student language use. A copy of this questionnaire is in Appendix B.

Both the Language Proficiency Questionnaire and Language Use Questionnaire were given to the subjects in order for them to report their own proficiency in and use of the Spanish language. The questionnaires were given to the subjects in their English classes. They filled them out at home and returned them to their English teachers the following day. Two weeks later the questionnaires were given to the subjects' parents to answer about the subjects. They were distributed in the subjects' English classes and taken home to their parents. The questionnaires were available for the parents in either Spanish or English. The parents answered the questionnaires in order to test the validity of the students' responses. The scores from the students' questionnaires and the parents' questionnaires were subjected to a t test procedure. No significant differences were found between the students' and parents' scores. Therefore, the students' responses to the questionnaires were considered valid.

With respect to the reliability of the Spanish Language Proficiency and Use Questionnaires, Fishman and Terry (1971) found high reliability upon questioning the participants with whom he used it one month later. He found a median census-recensus item correlation of .81.

The Writing Samples--In order to assess writing skills as a part of maintaining use of the Spanish language students were assigned the task of writing an essay in Spanish. This was

done in their English classes. The title of the essay was "La importancia de saber español e inglés" (The Importance of Knowing Spanish and English). The students were instructed to make the essay about 150 words in length. The students had fifty minutes to complete the essay. The directions for the essay are in Appendix B. Because some of the students were not able to write in Spanish they were asked to write the essay in English. This was done so that the students would not try to avoid writing the essay by saying that they could not write in Spanish. Two weeks after the students wrote the essay in Spanish the same essay was assigned in English. The reason for having a writing sample in English was so that the investigator would not conclude falsely that because a student was not able to write a good essay in Spanish that he is not maintaining the ability to write in Spanish. It might just be that he does not write well in either language.

The Spanish essays were scored by three Spanish teachers at the high school which the subjects attend. The English essays were scored by three English teachers from the same school. The students' names were not on the essays and the essays were typed so that handwriting would not affect the score.

The scorers were given rating sheets on which to record the grades for each essay. They kept the scores private so as not to influence each other's judgement. The scores ranged from 0 for inability to write in Spanish to 5 for the highest.



The essays were assessed along six dimensions, adapted from Lewis and Lewis (1965). These included verbal output (number of words), range of vocabulary, accuracy of spelling (ratio of number of errors to total number of words), grammatical correctness (ratio of number of errors to total number of words), quality of sentence structure (5 point scale with 5 being very complete sentences and much variety in sentence structure), and effectiveness of expression (5 point scale with 5 being very colorful use of words and high unity of composition).

#### Attitudes Toward the Spanish and English Languages

The student attitudes under investigation concerned what the students considered important reasons for learning both Spanish and English. The method used to study the students' attitudes was the Language Orientation Questionnaire. This questionnaire is based on a questionnaire developed by Gardner and Lambert (1959). One section deals with Spanish and the other with English. The questionnaire asked the students to react to seven suggested reasons for their children to learn both English and Spanish. The reasons were of two types, integrative and instrumental. Integrative reasons reflect a desire for more contact with the people who speak the language. Instrumental reasons indicate wanting to obtain a good job or to become better educated. There are five response choices, ranging from "very good reason" to "very bad reason". At the end of the questionnaire are three questions asking how important it is for their children to be

able to speak and understand, read and write Spanish and English. The response choices are "very important", "somewhat important" and "not important". A copy of the Language Orientation Questionnaire is included in Appendix E.

#### Collection of Other Data

In addition to the information which was gathered on the subjects with the instruments just described there was a need for other data to be collected. These data pertained to the elementary junior and senior high schools the BISO and Comparison groups attended, the community and the language situation in the community.

The Elementary Schools--The treatment in this study was the participation in a BISO school. It is necessary to describe the BISO school and the regular English language school that the Comparison group attended in order to define the treatment exactly. Points covered in their descriptions were those that could have particular influence upon the outcomes under investigation in the present study. These points included enrollment, language orientation of students, the curriculum, the amount of Spanish used at the school, philosophy of the school, language policy, and bilinguality of the staff.

The Junior and Senior High Schools--The junior and senior high schools the BISO and Comparison groups attended were described in the same way as the elementary schools.

The Community--The purpose of describing the community is to be able to view the relationship of individual language maintenance in the community context. The description was done through an inventory of Spanish or bilingual institutions in

the Miami area. This will give a good indication of the extent of community language maintenance. The inventory included numbers of Spanish and bilingual churches, schools, colleges, marketing institutions, health care facilities, recreational facilities, newspapers, radio and television stations.

### Data Analysis

#### Achievement in Reading and Mathematics Computation

Hypotheses one through four are concerned with achievement in reading and mathematics computation. The raw scores in these two areas of the Stanford Achievement Test were obtained for all the subjects in the BISO and Comparison groups. The statistical technique used to test these four hypotheses was a t test available in the SPSS program (Nie, Hull et al., 1972). The t test is a technique designed to test the null hypothesis that the means of two groups are the same.

#### Language Proficiency and Language Use

The Language Proficiency Questionnaire--The answers to the Language Proficiency Questionnaires were indexed and totaled into a score which was a number between zero and eight. This indicated the subject's ability in the four language skills in Spanish.

In order to validate the students' responses the questionnaires were also administered to the subjects' parents for them to answer about their children. It was reasoned that if there was no significant difference between the mean of the subjects'

responses and that of the parents' responses the questionnaires of the subjects could be considered valid. The means were subjected to a t test. No significant difference was found. Therefore, the following analysis was carried out on the subjects' questionnaires. The means of the two groups on the questionnaires were subjected to a t test in order to test whether there was a difference between the BISO and the Comparison groups on proficiency in Spanish.

The Language Use Questionnaire--The data from the Language Use Questionnaire were analyzed in much the same way as those of the Language Proficiency Questionnaire. The answers from the questionnaires were indexed. The maximum score for Spanish language use was 22 and the minimum was 0.

In order to validate the subjects' self-report responses on the Language Use Questionnaire it was also administered to the subjects' parents for them to answer about their children. A t test was done on the parents' scores and the subjects' scores to determine whether there was a significant relationship. There was not. Therefore, the scores of the BISO group and the Comparison group were subjected to a t test to ascertain whether there was a significant difference in the amount the two groups use Spanish.

#### Writing Ability in Spanish and English

The data analyses for hypotheses seven and eight were carried out separately but in the same manner. For this reason the analyses are described together.

Both the essays in Spanish and those in English were graded by a holistic scoring method. The scores were numbers between 0 and 5. A score of zero signified inability to write in Spanish. A five signified high ability.

In order to test the hypothesis that there is no significant difference in writing ability in Spanish between the BISO and Comparison groups the scores on the Spanish essays were subjected to a  $t$  test. The same procedure was used with the scores on the English essays to test hypothesis eight that there is no significant difference in writing ability between the BISO and the Comparison groups.

#### Attitudes Toward the Spanish and English Languages

On the Language Orientation Questionnaire seven statements were given for the students to rate as reasons for their children to learn Spanish and English in the future. The choices ranged from "very good reason" to "very bad reason". Three additional items asked how important it is to the respondent for their children to one day be able to understand, speak, read and write Spanish.

In order to test whether there was a significant difference between the BISO group and the Comparison group in their responses to the 10 items a chi-square test of independence was done for each item. The chi-square is an index employed to find the significance of differences between proportions of subjects, objects, events, and so forth, that fall into different categories, by comparing observed frequencies and expected frequencies (Ary, Jacobs and Razavieh, 1979).

## CHAPTER IV FINDINGS

The findings of the study and the results of the significance testing are reported in this chapter. A description of the schools the subjects attended and the community in which they live precedes these reports. The schools are described to make clear exactly what the treatment was. The community is described in order to provide a context in which language maintenance can be viewed.

This study consists of three parts. Therefore, the findings for each will be reported separately. First are the results of the analysis of the Stanford Achievement Test data. These include hypotheses one through four. Next are the findings concerning Spanish language maintenance, which cover hypotheses five through eight. Last are the findings of the attitude testing, which is hypothesis nine.

### The Schools

The two groups in this study attended four schools during their 12 years of schooling. The BISO group attended a Bilingual School Organization (BISO) elementary school for their first six years of schooling--from 1968 to 1974. The Comparison group attended a regular all-English elementary school during

the same years. Both groups attended the same junior and senior high schools. Following are descriptions of the four schools at the times the students from this study were enrolled in them. Other pertinent facts about their educations are included.

#### The BISO School

Enrollment. The enrollment in the BISO school at each grade level during the years 1968-74 was between 150 and 200 students. The total school enrollment grew from about 1,000 in 1968 to about 1,400 in 1974.

As the school population increased from 1968 to 1974 so did the proportion of Spanish language origin pupils. In 1968 approximately seventy percent of the pupils were Spanish language origin. This percentage increased to over ninety percent by 1974.

The curriculum. At the time the subjects attended the BISO school the bilingual curriculum had eight components. Four of the components were designed for the Spanish language origin students. The other four were for the English language origin students. Those aimed at the Hispanic student were: Spanish for Spanish-Speakers, Curriculum Content in Spanish, English as a Second Language and Curriculum Content in English for Spanish-speakers.

Spanish for Spanish-Speakers is a language and culture program designed to teach Spanish language arts to any Spanish-speaking student. This class was taught for approximately one hour per day.

Curriculum Content in Spanish encompasses the teaching of mathematics, social studies and science in the Spanish language. This class lasted for about one hour in the mornings.

English as a Second Language was a full language arts and culture program designed for students whose native language was other than English. This was taught for approximately one hour in the afternoons.

The fourth component, Curriculum Content in English for Spanish-Speakers, taught mathematics, science and social studies in the English language. This class lasted for one hour in the afternoons.

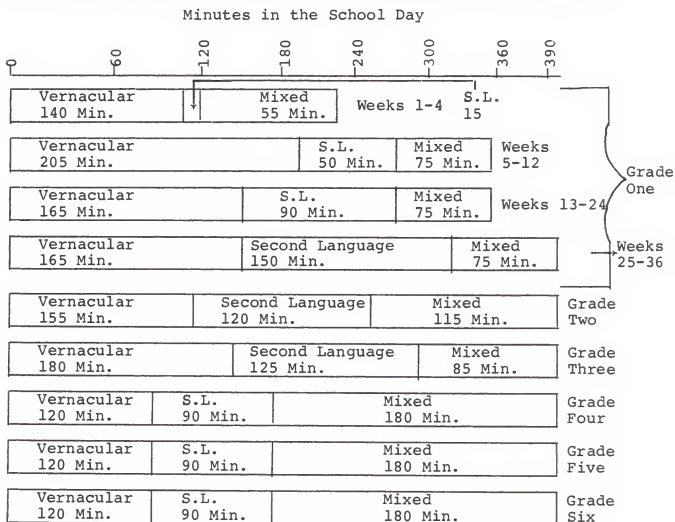
In addition to these components the students also were instructed in art, music and physical education using both Spanish and English. In these classes was a mixture of Spanish language origin and English language origin students. Table 1 presents the time distribution pattern for the BISO school.

One of the outstanding features of the BISO school was the fostering of a bilingual atmosphere within the school. More than half of the staff was bilingual. Both the staff and the pupils were encouraged to use both Spanish and English in the halls, cafeteria, playground and offices of the school. All messages sent to the students' homes were in both Spanish and English. More than half of the teachers in the school were from Spanish-speaking backgrounds. They were able to present instruction in both Spanish and English and converse with the pupils in either language in all areas of the school throughout the day.



Table 1

## Coral Way Time Distribution Pattern



Vernacular and second language (S.L.) mean the use of these as mediums of instruction. Mixed in grades 1-3 means physical education, art and music only. In grades 4-6 mixed also means combined classes of Anglos and Cubans alternating 3 weeks of each grading period working through English only, and 3 weeks working through Spanish only, in all subjects.

Source: Coral Way Elementary: Time Distribution Pattern.  
Miami, Florida, 1972.

With regard to the philosophy of the school it was stated that:

The ultimate goal of the program is to produce bilingual and bicultural individuals who can communicate orally and in writing in both languages with proficiency commensurate with their experiential and educational level, age and interests, and who can interact with equal effectiveness with members of both cultures. (Dade County Public Schools, 1972)

#### The Comparison School

Enrollment. Between the years 1968 and 1974 the enrollment at each grade level of the Comparison group's elementary school was between 145 and 245. The total enrollment of the school increased from approximately 950 in 1968 to 1,500 in 1974.

As was the case with the BISO school the percentage of Spanish language origin children increased as the enrollment of the school did. In 1968 the percentage of Spanish language origin pupils was about sixty-five. It increased to over ninety percent by 1974.

The curriculum. The curriculum of the elementary school which the Comparison group attended was the regular English language curriculum. It included mathematics, English language arts, science, social studies, art, music and physical education. In addition English as a Second Language was offered. Spanish for Spanish-Speakers was initiated in 1971.

The policy of the school did not discourage the use of Spanish. The students and the staff could use it freely in the cafeteria, halls, playground and offices.

### The Junior High School

Both the BISO and the Comparison groups attended one junior high school for grades seven through nine. This was from September, 1974 until June, 1977. This was a bilingual school organization at the junior high school level.

Enrollment. The enrollment in the junior high school at each grade level during the years 1974 until 1977 was approximately 550. The enrollment of the school was about 1,650. In 1974 the percentage of Spanish language origin pupils was more than seventy-six. This increased to over ninety percent by 1977.

The curriculum. Between 1974 and 1977 all students in the seventh, eighth and ninth grades were required to take English language arts, science, mathematics, social studies and physical education. They also took a foreign language, typing, band or orchestra. In addition, bilingual science, bilingual social studies, English as a Second Language and Spanish for Spanish-Speakers were offered. In the bilingual science and social studies classes the material was presented alternately in Spanish and English. Those students enrolled in either bilingual science or bilingual social studies were required to take Spanish language arts. That was either Spanish for Spanish-Speakers or Spanish as a Second Language.

Many more students from the BISO Group chose to take Spanish for Spanish-Speakers and bilingual curriculum content courses in their junior high school years than did students in the Comparison group. None of the students in either group

needed English as a Second Language. Table 2 presents the number of students in each group enrolled in the courses each year.

Table 2

Numbers of BISO and Comparison Group Students  
Enrolled in Bilingual Classes in Grades 7, 8 and 9

Grade Level	BISO			Comparison		
	7	8	9	7	8	9
Spanish for Spanish-Speakers	48	43	40	24	19	9
Bilingual Science or Social Studies	42	38	34	0	0	0

There was no official language policy at this school. Students were permitted to speak both Spanish and English in all parts of the school. It was a desire on the part of the administration and staff of the school that both the Spanish and English language origin students become fully bilingual (Dade County School Board, 1977).

#### The Senior High School

The BISO and the Comparison groups attended the same senior high school for grades ten through twelve. This was from September, 1977, until June, 1980.

Enrollment. The enrollment of the senior high school from 1977 to 1979 was about four thousand students each year.

For the 1979-1980 school year it had declined to approximately three thousand. In those years the percentage of the student population which was Spanish language origin was eighty-eight.

The curriculum. During the years the subjects of this study were in high school they were required to take three years of English language arts, two years each of mathematics and social studies and one year each of science and physical education. In addition they had to take eighteen semester-long courses choosing from the content areas mentioned above or from the following: art, business education, foreign languages, driver and safety education, music, home economics, industrial arts and vocational trade. The only course taught bilingually was biology. Five levels for Spanish language arts were offered.

As was the case in junior high school no students in the Comparison group studied bilingual biology. Few students in either group continued studying Spanish language arts in high school. Table 3 presents the number of students in each group that took those courses each year.

Table 3

Numbers of BISO and Comparison Group Students Enrolled in Bilingual Biology and Spanish Language Arts in Grades 10, 11 and 12								
Grade Level	BISO			Comparison				
	10	11	12	10	11	12		
Spanish for Spanish-Speakers	9	7	3	8	4	5		
Bilingual Biology	13	0	0	0	0	0		

There was no written language policy in the senior high school. Students were permitted to use both English and Spanish in all areas of the school. As part of the philosophy of the school it was stated that "all students should be encouraged to develop effective communication skills primarily in English but also in Spanish . . ." (Miami High School, 1979).

### The Community

The community in which this study was carried out was Miami, Florida. Miami is located in Dade County which is on the east coast of southern Florida. The specific area of the community in which the subjects of this study lived and attended school lies near the central, downtown business district and includes the predominantly Hispanic "Little Havana" section of the city of Miami.

The population. The population of Dade County has changed dramatically over the past twenty years. Table 4 presents the growth of the population since 1960 (Strategy Research Corporation, 1980).

Table 4

Growth of Dade County Population  
1960-1980  
April 1, Each Year

=====	
Year	Population
1960	935,047
1970	1,267,792
1975	1,487,800
1980	1,750,900

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Large numbers of Cubans have made Dade County their home since Fidel Castro came to power in Cuba in 1959. From 1959 until 1965, 190,000 Cuban refugees escaped to Miami. Approximately 48,000 of them settled in other parts of the United States leaving 142,000 in Miami. Freedom Flights from Cuba began in 1965 and ended in 1973, bringing 260,561 Cuban refugees to Miami. Of those about 30 percent stayed in Miami. The most recent influx of Cuban refugees occurred between April 21 and September 15, 1980. During that time 123,825 refugees entered Miami from Mariel, Cuba. Of those it is estimated that approximately 75,000 have settled in Miami.

Although people of Cuban background compose the majority of the Latin population in Miami, many other Spanish-speaking peoples from the United States and other countries have made Miami their home. Table 5 presents the increase in the proportion of the Latin population in Dade County over the last ten years (Strategy Research Corporation, 1980).

Table 5  
Change in Dade County Population  
1970-1980

Date	Total Population	Latin Population	Percent Latin
April, 1970	1,267,792	299,217	23.6%
April, 1975	1,487,800	488,500	32.8
April, 1980	1,750,900	682,097	38.9
September, 1980	1,820,900	752,097	41.3

Language in the community. A study by Strategy Research Corporation (1980) states that in seventy-five percent of Latin homes in Miami Spanish is the predominant language spoken, with only 3.4 percent favoring English. Twenty-one percent of the homes reported using both languages equally.

In Miami the Latin population can attend to all personal and business needs using only the Spanish language. Of the eighteen thousand businesses in Miami more than one-third are Latin owned and operated. There are five hundred grocery markets which serve their clientele in Spanish. Approximately eighty percent of the gas stations are Latin owned.

In the area of health care there are fifteen Latin out-patient clinics. In addition, all the hospitals in the city have personnel who can work with Spanish-speaking people.

With respect to religious and educational needs of the Latin population, Miami has the facilities to fulfill them. More than forty percent of all religious services are offered in Spanish. In the public school system there are four bilingual schools which offer curriculum content classes in both Spanish and English. There are twenty-five private schools which do the same. There are two universities, one college and one junior college which offer classes in Spanish in a variety of subjects.

In the area of entertainment there is no shortage of establishments to serve the Spanish-speaking clientele. In addition to hundreds of restaurants and nightclubs there are two ballet companies, one light opera company, six live theatres and six movie theatres.



There are approximately twenty newspapers and magazines published in Spanish in Miami including a Spanish version of the major newspaper. There are five radio stations broadcasting in Spanish. There is one full-time television station operating in Spanish and two part-time.

It is predicted that the language situation in Miami will change very slowly; Spanish should maintain its strong position (Strategy Research Corporation, 1980). This is due in large part to the constant immigration of Spanish-speaking people who settle in Miami, and to the fact that there is a very large amount of tourism and trade with companies from Latin America.

### Achievement

#### Hypothesis 1.

There is no significant difference between the BISO group and the Comparison group in reading achievement as measured by the reading portion of the Stanford Achievement Test at grade seven.

The means, standard deviations and findings of the  $t$  test of the seventh grade reading scores are presented in Table 6.

Table 6

Means, Standard Deviations and  $T$  Test of  
Seventh Grade Reading Scores for the Two Groups

Group <sup>a</sup>	$\bar{X}$	S.D.	df	T
BISO	34.21	9.09	92	.90
Comparison	36.12	11.50		

<sup>a</sup> $n = 47$  for each group.

The analysis revealed no significant difference between groups for the seventh grade reading scores of the Stanford Achievement Test. Therefore, Hypothesis 1 was accepted.

### Hypothesis 2.

There is no significant difference between the BISO group and the Comparison group in mathematics achievement as measured by the mathematics portion of the Stanford Achievement Test at grade seven.

The means, standard deviations and findings of the  $t$  test for the seventh grade mathematics scores for each group are shown in Table 7.

Table 7

Means, Standard Deviations and  $T$  Test of  
Seventh Grade Mathematics Scores for the Two Groups

=====					
Group	n	$\bar{X}$	S.D.	df	T
BISO	46	26.87	12.90	70.22	.13
Comparison	47	27.14	6.83		

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The analysis revealed no significant difference between groups for the seventh grade mathematics scores of the Stanford Achievement Test. Therefore, Hypothesis 2 was accepted.

### Hypothesis 3.

There is no significant difference between the BISO group and the Comparison group in reading achievement as measured by the reading portion of the Stanford Achievement Test at grade eleven.

The means, standard deviations and findings of the t test of the eleventh grade reading scores for each group are presented in Table 8.

Table 8

Means, Standard Deviations and T Test of  
Eleventh Grade Reading Scores for the Two Groups

Group <sup>a</sup>	$\bar{X}$	S.D.	df	T
BISO	52.17	10.22	83.10	-2.17*
Comparison	46.69	13.76		

<sup>a</sup>n = 46 for each group.

\*p < .05.

The analysis revealed a significant difference between the BISO group and the Comparison group in reading achievement as measured by the reading portion of the Stanford Achievement Test at grade eleven. Therefore, Hypothesis 3 was rejected.

#### Hypothesis 4.

There is no significant difference between the BISO group and the Comparison group in mathematics achievement as measured by the mathematics portion of the Stanford Achievement Test at grade eleven.

Table 9 presents the means, standard deviations and the findings of the t test of the eleventh grade mathematics scores for each group.

Table 9

Means, Standard Deviations and T Test of  
Eleventh Grade Mathematics Scores for the Two Groups

Group	n	$\bar{X}$	S.D.	df	T
BISO	48	34.54	8.34	93	-1.75
Comparison	47	31.38	9.23		

The analysis revealed no significant difference between the BISO group and the Comparison group in mathematics achievement as measured by the mathematics portion of the Stanford Achievement Test. Therefore, Hypothesis 4 was accepted.

#### Language Maintenance

In order to ensure that the students' responses on the Language Proficiency Questionnaire were valid it was also administered to both groups' parents so that they could respond about their children's proficiency.

The t-test procedure was used to test the following hypotheses:

1. There is no difference between BISO students' responses and their parents' responses on the Language Proficiency Questionnaire.
2. There is no difference between the Comparison students' responses and their parents' responses on the Language Proficiency Questionnaire.

Table 10 presents the means, standard deviations and findings of the t test of the scores on the Language Proficiency Questionnaire for the BISO group and their parents.

Table 10

Means, Standard Deviations and T Test of BISO Students' and Parents' Responses on the Language Proficiency Questionnaire

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Group <sup>a</sup>	$\bar{X}$	S.D.	df	T
BISO student	8.00	.000	98	-1.63
BISO parent	7.88	.521		

---

<sup>a</sup>n = 50 for each group.

No significant difference was found between the BISO students' responses and their parents' responses on the Language Proficiency Questionnaire. Hypothesis 1 was accepted. Therefore, the students' questionnaires were considered valid.

The means, standard deviations and findings of the t test on the scores on the Language Proficiency Questionnaire for the Comparison group and their parents are shown in Table 11.

Table 11

Means, Standard Deviations and T Test of Comparison Students' and Parents' Responses on Language Proficiency Questionnaire

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Group <sup>a</sup>	$\bar{X}$	S.D.	df	T
Comparison Student	7.78	.61	98	.88
Comparison parent	7.88	.52		

---

<sup>a</sup>n = 50 for each group.

The analysis revealed no significant difference between the Comparison students' responses and their parents' responses on the Language Proficiency Questionnaire. Hypothesis 2 was accepted. Consequently, the students' questionnaires were considered valid.

#### Hypothesis 5.

There is no significant difference between the BISO group and the Comparison group in degree of Spanish language proficiency as reported on the Language Proficiency Questionnaire given in the twelfth grade.

Table 12 presents the means, standard deviations and findings of the t test on the scores of the Language Proficiency Questionnaire for the two groups.

Table 12

Means, Standard Deviations and T Test of BISO and Comparison Groups' Responses on Language Proficiency Questionnaire  
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Group <sup>a</sup>	$\bar{X}$	S.D.	df	T
BISO	8.0	.000	49	-2.53*
Comparison	7.78	.616		

<sup>a</sup>n = 50 for each group.

\*p < .01.

The analysis revealed a significant difference in proficiency in Spanish between the BISO and the Comparison groups

on the Language Proficiency Questionnaire given in grade twelve. Therefore, Hypothesis 5 was rejected.

In order to validate the students' responses on the Language Use Questionnaire, they were also administered to the students' parents to respond about their children's use of Spanish.

T tests were used to test the following:

1. There is no difference between the BISO students' responses and their parents' responses on the Language Use Questionnaire.
2. There is no difference between the Comparison students' responses and their parents' responses on the Language Use Questionnaire.

The means, standard deviations and findings of the t test on the scores on the Language Use Questionnaire of the BISO group and their parents are presented in Table 13.

Table 13

Means, Standard Deviations and T Test of BISO Students' and Parents' Responses on Language Use Questionnaire

Group <sup>a</sup>	$\bar{X}$	S.D.	df	T
BISO student	9.62	4.70	98	.08
BISO parent	9.70	4.72		

<sup>a</sup>n = 50 for each group.

The analysis revealed no significant difference between the BISO students' responses and their parents' responses on the Language Use Questionnaire. Therefore, the questionnaire was considered valid.

Table 14 presents the means, standard deviations and findings of the t test on the scores on the Language Use Questionnaire for the Comparison group and their parents.

Table 14

Means, Standard Deviations and T Test of Comparison Students' and Parents' Responses on the Language Use Questionnaire  
=====

Group <sup>a</sup>	$\bar{X}$	S.D.	df	t
Comparison student	10.06	4.76	98	-.04
Comparison parent	10.02	4.65		

---

<sup>a</sup>n = 50 for each group.

No significant difference was found between the responses of the Comparison group and their parents on the Language Use Questionnaire. The questionnaire was considered valid.

#### Hypothesis 6.

There is no significant difference between the BISO group and the Comparison group in Spanish language use as reported on the Language Use Questionnaire given in the twelfth grade.

The means, standard deviations and the findings of the t test of the scores on the Language Use Questionnaire are presented in Table 15.



Table 15

Means, Standard Deviations and T Test of Scores of  
the Two Groups on the Language Use Questionnaire

Group <sup>a</sup>	$\bar{X}$	S.D.	df	t
BISO	9.62	4.70	98	.46
Comparison	10.06	4.76		

<sup>a</sup>n = 50 for each group.

The analysis revealed no significant difference between the BISO group and the Comparison group in the amount they use Spanish as measured by the Language Use Questionnaire. Therefore, Hypothesis 6 was accepted.

#### Hypothesis 7.

There is no significant difference between the BISO group and the Comparison group in writing ability in Spanish as measured by an essay written in Spanish.

The means, standard deviations and the results of the t test on the scores on the Spanish essays for both groups are presented in Table 16.

Table 16

Means, Standard Deviations and T Test  
of the Scores on the Spanish Essays

Group <sup>a</sup>	$\bar{X}$	S.D.	df	t
BISO	3.43	.84	94	-4.70*
Comparison	2.45	1.16		

<sup>a</sup>n = 48 in each group.

\*p < .01.

A significant difference was found between the BISO group and the Comparison group in writing ability in Spanish. Therefore, Hypothesis 7 was rejected.

#### Hypothesis 8.

There is no significant difference between the BISO group and the Comparison group in writing ability in English as measured by an essay written in English.

Table 17 presents the means, standard deviations and the results of the t test on the scores of the English essays of both groups.

Table 17

Means, Standard Deviations and T Test of  
Scores on the English Essays

Group <sup>a</sup>	$\bar{X}$	S.D.	df	t
BISO	3.39	.81	94	-.88
Comparison	3.25	.81		

<sup>a</sup>n = 48 in each group.

The analysis revealed no significant difference between the BISO group and the Comparison group in writing ability in English. Therefore, Hypothesis 8 was accepted.

### Attitudes

#### Hypothesis 9.

There are no significant differences between the BISO group and the Comparison group in their attitudes toward learning Spanish and English.

Tables 18 and 19 present the results of the chi-square tests for independent samples performed on the Spanish and English portions of the Language Orientation Questionnaires of the BISO and the Comparison groups.

Table 18

Findings of the Chi-Square Test on the Spanish Portion of the Language Orientation Questionnaire							
Item	1	2	3	4	5	6	7
df	2	1	2	1	2	1	1
$\chi^2$	4.94	.26	.92	.208	.968	.642	1.96

Table 19

Findings of the Chi-Square Test on the English Portion of the Language Orientation Questionnaire							
Item	1	2	3	4	5	6	7
df	1	1	2	2	1	2	1
$\chi^2$	1.2	.13	1.627	.49	0	.984	.592

No statistical tests were carried out on the last three items of the questionnaires dealing with the importance of being able to understand, speak, read and write both Spanish and English. All fifty respondents in both groups rated these capabilities as "Very Important". No significant differences were found between the BISO and Comparison groups on their responses to the Language Orientation Questionnaire. Therefore, Hypothesis 9 was accepted.

## CHAPTER V

### SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

This chapter reviews the purpose and procedures used in the study, as well as the hypotheses tested and the findings derived. The findings are discussed. The chapter ends with the conclusions and recommendations.

#### Summary

##### Purpose

The purpose of this study was to determine whether participation by Hispanic students in bilingual schooling in grades one through six promotes higher achievement in reading and mathematics skills and maintenance of the Spanish language. The study also investigated whether such participation influences the students' attitudes toward learning the Spanish and English languages.

##### Procedures

This study covered three separate areas; therefore, three different methods were used. It was deemed important to describe the schools the subjects attended and the community in which they live.

To test the following hypotheses:

1. There is no significant difference between the BISO group and the Comparison group in reading achievement as measured by the reading portion of the Stanford Achievement Test at grade seven.
2. There is no significant difference between the BISO group and the Comparison group in mathematics achievement as measured by the mathematics portion of the Stanford Achievement Test at grade seven.
3. There is no significant difference between the BISO group and the Comparison group in reading achievement as measured by the reading portion of the Stanford Achievement Test at grade eleven.
4. There is no significant difference between the BISO group and the Comparison group in mathematics achievement as measured by the mathematics computation portion of the Stanford Achievement Test at grade eleven.

the subjects' Stanford Achievement Test scores were obtained for reading and mathematics at the seventh and eleventh grades from their cumulative records.

In the area of Spanish language maintenance the following four hypotheses were tested:

5. There is no significant difference between the BISO group and the Comparison group in degree of Spanish language proficiency as reported on the Language Proficiency Questionnaire.
6. There is no significant difference between the BISO group and the Comparison group in Spanish language use as reported on the Language Use Questionnaire.
7. There is no significant difference between the BISO group and the Comparison group in writing ability in Spanish as measured by an essay written in Spanish.
8. There is no significant difference between the BISO group and the Comparison group in writing ability in English as measured by an essay written in English.

The Language Proficiency and the Language Use Questionnaires, which were developed by Fishman and Terry

(1971), were used to test these hypotheses. These questionnaires were also administered to the subjects' parents in order to assess their validity.

In the third area of this study, that of student attitudes toward learning Spanish and English, the Language Orientation Questionnaire, which was developed by Gardner and Lambert (1959), was used to test the following hypothesis:

9. There is no significant difference between the BISO group and the Comparison group in their attitudes toward learning Spanish and English as reported on the Language Orientation Questionnaire.

## Findings

### Achievement

The BISO group and the Comparison group did not differ significantly in reading achievement at the seventh grade according to the t test done on their scores on the reading portion of the Stanford Achievement Test. Null Hypothesis 1 was therefore accepted.

No significant differences were found between the BISO group and the Comparison group in mathematics achievement at the seventh grade. Null Hypothesis 2 was accepted.

The null hypothesis of no significant difference between the BISO group and the Comparison group in reading achievement at the eleventh grade was rejected. The t test revealed that the BISO group had higher mean scores than the Comparison group on the reading portion of the Stanford Achievement Test.

The t test revealed no significant difference between the mean scores of the BISO group and the Comparison group in

mathematics achievement at grade eleven. Therefore, Null Hypothesis 4 was rejected.

#### Language Maintenance

When the responses of the BISO group on the Language Proficiency Questionnaire were compared with those of their parents no significant differences resulted from the  $t$  test, nor were there significant differences between the Comparison groups responses and those of their parents on the same questionnaire. Therefore, the questionnaires of the BISO group and the Comparison group were considered valid.

There was a significant difference between the BISO group and the Comparison group in their proficiency in Spanish as reported on the Language Proficiency Questionnaire. Null Hypothesis 5 was rejected.

No significant difference was found when the responses of the BISO group were compared with those of their parents on the Language Use Questionnaire, nor were there significant differences between the responses of the Comparison group and those of their parents on the same questionnaire. Consequently, the Language Use Questionnaires were considered valid for both groups.

The BISO group and the Comparison group did not differ significantly in the amount they use Spanish as reported on the Language Use Questionnaire. Therefore, Null Hypothesis 6 was accepted.

The  $t$  test revealed a significant difference between the BISO group and the Comparison group in their writing ability in Spanish. Therefore, Null Hypothesis 7 was rejected.



No significant difference was found between the BISO group and the Comparison group in writing ability in English. Null Hypothesis 8 was accepted.

### Attitudes

The chi-square procedures which analyzed the responses of the BISO group and the Comparison group on the first seven items of both parts of the Language Orientation Questionnaire revealed no significant differences between the two groups. There were no differences in the responses of both groups on the last three items. Therefore, Null Hypothesis 9 was accepted.

### Discussion

In the area of achievement the students in the BISO group performed as well as those in the Comparison group in reading in the seventh grade. By the eleventh grade the BISO group did significantly better than the Comparison group in reading achievement. In a study of Cuban children in grades three through eight in Miami Inclán (1971) reports that those instructed bilingually in reading achieved as well as a comparison group instructed only in English. Other studies, such as those of John and Horner (1971) in Texas, Cohen in Redwood City (1975a) and Saldate and Mishra (1978) in Douglas, Arizona, show that Spanish-dominant students instructed bilingually achieve higher scores than comparison groups instructed only in English. The fact that the BISO group performed better than the Comparison group in the eleventh grade but not in the seventh could be attributable to the

cumulative effect of bilingual education. The studies by Rosier and Farella (1976) with the Navajo in Arizona and Leyba (1978) in Santa Fe suggest that longitudinal studies are necessary to determine these cumulative effects.

The students in the BISO group performed as well as those in the Comparison group in mathematics achievement in the seventh grade. This is consistent with the findings of Inclán (1971) which showed that Cuban students in Miami schooled bilingually in mathematics came out as well as the control group taught only in English. Other studies, such as those by Treviño (1968) and Hartwig (1971), have shown that Spanish-speaking pupils who were taught mathematics bilingually performed better than those instructed only in English.

The findings of the present study suggest that students instructed bilingually do not suffer academically in reading or mathematics as measured by the Stanford Achievement Test. Furthermore, it may be possible that being instructed to read in both Spanish and English may have given the BISO group an advantage in their reading ability in English.

In the area of Spanish language maintenance this study focused on the amount the students use Spanish and their proficiency in the language. The results of the study indicated no significant difference in the amount the two groups use Spanish in conversations in most social domains, for reading books and newspapers and for writing letters. However, the results of the Language Proficiency Questionnaire showed a significant difference in the two groups' ability in Spanish.

Whereas all the students in the BISO group reported that they are able to converse, read and write in Spanish, a large number of the Comparison group reported that they are unable to read or write in Spanish. The essays that the two groups wrote in Spanish indicated the same results. All of the members of the BISO group wrote an essay in Spanish, but twelve of the Comparison group students were unable to attempt it. The difference in the two groups' abilities in Spanish may be attributable to the fact that the BISO group participated in Spanish language arts and curriculum content in Spanish in all six years of their elementary schooling. Many of them continued these courses in the junior high school. In the senior high school many continued taking language arts in Spanish but curriculum content was not available. The students in the Comparison group took two years or less of Spanish language arts in the elementary school and very few chose to study Spanish beyond that level. None of the Comparison group studied curriculum content in Spanish at the elementary or secondary levels.

Part of the study required that both groups write essays in English. The purpose was to ascertain whether there existed a difference between the two groups' writing ability in English.

Although there was no significant difference, the scores of the BISO group were somewhat higher than those of the Comparison group. However, caution must be taken in viewing that result. Replication of the study would be advisable. *why?*

In the area of attitudes toward learning both Spanish and English the BISO and the Comparison groups did not differ in

their choice of reasons for learning each language. Both groups indicated that the instrumental reasons, "It will someday be useful to them in getting a job", and "They need it for some specific educational or business goal," were very good reasons for learning both Spanish and English.

It is interesting that all the students in both groups rated as "Very Important" the ability for their children to understand, speak, read and write both languages in light of the fact that many of those in the Comparison group lack the skills of reading and writing in Spanish.

It is important to note that the time during which this study was done could have had an effect on the outcome of this questionnaire. Thousands of Cuban refugees were entering Miami at the time, something to which many English-speaking Miamians were opposed. Simultaneously a faction of the citizenry of Miami were very vocal in trying to pass a referendum that would prohibit the spending of public funds for anything that would promote a language other than English. At the time the Latin community exhibited a defensive attitude through the media and at a more personal level. The importance of Spanish in the economic realm of Miami was reiterated again and again. There is the possibility that these occurrences may have affected the thinking of the students and obliterated any differences that may have existed between the attitudes of the two groups.

### Conclusions

The following conclusions seem warranted in light of the findings and limitations of this study:

1. Participation by Spanish language origin students in maintenance bilingual elementary education programs does not seem to promote or inhibit achievement in mathematics in the years of schooling that follow.
2. Participation by Spanish language origin students in maintenance bilingual elementary education programs appears to have beneficial effects on achievement in reading in English in the years of schooling that follow.
3. The English writing ability of Spanish language origin students does not appear to be harmed or enhanced by participation in maintenance bilingual elementary education programs.
4. Spanish language origin students who attend maintenance bilingual elementary education programs will acquire the skill of writing in Spanish, which may not occur if they attend elementary schools with an all-English curriculum.
5. Spanish language origin students who participate in maintenance bilingual elementary education programs continue to study Spanish language arts at the secondary level more than comparable students who attend an all-English elementary school.

6. Spanish language origin students who participate in maintenance elementary bilingual education programs maintain proficiency in Spanish to a greater extent than comparable students who attend an all-English elementary school.

#### Recommendations

The following recommendations are suggested as a result of the findings and conclusions of this study:

1. The school district where this study was conducted should consider the following suggestions:
  - a. The Bilingual School Organization programs should be put in many other elementary schools that have a large number of Spanish language origin pupils. These maintenance bilingual programs seem to be most beneficial to students in the areas of English reading and Spanish writing. These programs have no detrimental effects on the student. It is also hoped that more English language origin students would attend these programs in order to enjoy the benefit of becoming bilingual.
  - b. The guidance departments of all elementary and secondary schools should have programs which inform the students of the importance of not only speaking, but of reading and writing, Spanish in order to use it in a career in the future.

2. The study should be replicated in order to further investigate the students' writing ability in English and their attitudes toward learning both Spanish and English. The following changes might be made:
  - a. The study should include English language origin students who attended BISO schools. A comparison group would be Spanish origin students in the same schools and English language origin students who studied Spanish as a second language.
  - b. Another attempt would be made to obtain standardized scores for the achievement tests in order to know how the subjects compared with others in the county, the state and the nation.
  - c. The study would follow the students beyond high school to examine such areas as success on the job, success in college and achievement of goals.

## BIBLIOGRAPHY

- Amodeo, L. One perspective on multicultural education. An opinion paper, 1977. (ERIC Document Reproduction Service No. ED 178 493).
- Ary, D., L.C. Jacobs and A. Razavieh. Introduction to research in education. New York: Holt, Rinehart and Winston, 1979.
- Barik, H., and M. Swain. Bilingual Education Project: Evaluation of grades 2-4. Toronto: Ottawa Board of Education and Carleton Board of Education, Dec., 1975. (ERIC Document Reproduction Service No. ED 121 056).
- Bowen, D.J. Linguistic perspectives in bilingual education. In B. Spolsky and R.L. Cooper (Eds.), Current trends in bilingual education. The Hague: Mouton & Co., 1975.
- Buxton, E.W. An experiment to test the effects of writing frequency and guided practice upon skills in written expression. Alberta Journal of Educational Research, 1959, 4, 91-99.
- Cohen, A.D. A sociolinguistic approach to bilingual education. Rowley, Mass.: Newbury House Publishers, Inc., 1975a.
- Cohen, A.D. Assessing language maintenance in a Spanish-speaking community of the Southwest. In E. Hernández-Chavez, A.D. Cohen and A.F. Beltramo (Eds.), El lenguaje de los chicanos. Arlington, Va.: Center for Applied Linguistics, 1975b.
- Cohen, A.D. Bilingual schooling and Spanish language maintenance: An experimental analysis. The Bilingual Review, 1975c, 2(1&2), 3-12.
- Cohen, A.D. Progress report on the Culver City Spanish immersion program: The third and fourth years. Working papers in teaching English as a second language. Los Angeles: University of California, 1975d. (ERIC Document Reproduction Service No. ED 121 093).
- Cohen, A.D. Second language testing. In M. Celce-Murcia and L. McIntosh (Eds.), Teaching English as a second or foreign language. Rowley, Mass.: Newbury House Publishers, Inc., 1979.



- Cohen, A.D., and F. Rodríguez-Brown. Evaluation in moderate-to-small school districts: Downstate Illinois, 1976. (ERIC Document Reproduction Service No. ED 157 924).
- Coles, G.J. The evaluation of the ESEA Title VII Spanish/English bilingual education program: Research design and analytic procedures. Paper presented at the annual meeting of American Educational Research Association, Toronto, Canada, 1978. (ERIC Document Reproduction Service No. ED 164 606).
- Cooper, R.L., and J.A. Fishman. A study of language attitudes. The Bilingual Review, 1977a, 4(1&2), 7-34.
- Cooper, R.L., and J.A. Fishman. A study of language attitudes: The impact of English on Israeli high school students. In J.A. Fishman et al. (Eds.), The spread of English. Rowley, Mass.: Newbury House Publishers, Inc., 1977b.
- Coral Way Elementary: Time Distribution Pattern. Miami, Fla., 1972.
- Dade County Office of Management and Educational Audits. 1976-77 Evaluation of the Dade County bilingual school organization program. Miami, Fla., 1977.
- Dade County Public Schools. Program budget for fiscal 1972-73, Miami, Fla., 1972.
- Dade County School Board. Annual report of school progress for 1976-77 at Shenandoah Junior High School, Miami, Fla., 1977.
- Danoff, M. The evaluation of the ESEA Title VII Spanish/English bilingual education programs: Overview of findings. American Institute of Research in the Behavioral Sciences, Palo Alto, Cal., March, 1978. (ERIC Document Reproduction Service No. ED 162 524).
- Diederich, P.B. Measuring growth in English. National Council of Teachers of English, 1974.
- Dube, N.C., and G. Herbert. St. John Valley bilingual education project. (Prepared for the Department of Health, Education, and Welfare under contract No. OEC-O-74-9331). Washington, D.C.: U.S. Government Printing Office, 1975.
- Dulay, H., and M. Burt. Bilingual education: A close look at its effects. Focus, 1971, 1, 1.
- Engle, P.L. The use of vernacular languages in education. Arlington, Va.: Center for Applied Linguistics, 1975.

Erickson, F. Mere ethnography: Some problems in its use in educational practice. Occasional Paper No. 15, 1979. (ERIC Document Reproduction Service No. ED 177 041).

Feenstra, H.J. Aptitude, attitude and motivation in second-language acquisition. Doctoral dissertation. University of Western Ontario, 1968.

Fishman, J.A. Language maintenance and language shift as a field of inquiry. Linguistics, 1964, 9, 32-70.

Fishman, J.A. Language and sociocultural change. Stanford, Cal.: Stanford University Press, 1972.

Fishman, J.A. The social science perspective. In Center for Applied Linguistics, Bilingual education: Current perspectives, Arlington, Va., 1977.

(Fishman, J.A., and C. Terry. The contrastive validity of census data on bilingualism in a Puerto Rican neighborhood. In J.A. Fishman, R.L. Cooper and R. Ma (Eds.), Bilingualism in the barrio. Bloomington: Indiana University, 1971.

Gaarder, A.B. Bilingual schooling and the survival of Spanish in the United States. Rowley, Mass.: Newbury House Publishers, Inc., 1977.

Gardner, E.F., R. Callis, J.C. Merwin and R. Madden. Stanford Test of Academic Skills. New York: Harcourt, Brace, Jovanovich, Inc., 1973.

Gardner, R.C. Motivational variables in second-language acquisition. Unpublished doctoral dissertation. McGill University, 1960.

Gardner, R.C., and W.E. Lambert. Motivational variables in second-language acquisition. Canadian Journal of Psychology, 1959, 13, 266-272.

González, G. Teaching bilingual children. In Bilingual education: Current perspectives, linguistics. Arlington, Va.: Center for Applied Linguistics, 1977.

Horner, J. How do we know how well kids write? A program for testing writing. The English Journal, 1978, 67(7), 60-61.

Hudson, S., and R. Veal. Assessing writing competence through writing samples. Athens, Ga.: University of Georgia, Oct. 1979. (ERIC Document Reproduction Service No. ED 184 130).

- Huntley, R. Assessment of rhetoric proficiency: Role of objective tests and writing samples. A paper at the National Council of Measurement in Education, San Francisco, April, 1979. (ERIC Document Reproduction Service No. ED 173 419).
- Inclán, Rosa G. An updated report on bilingual schooling in Dade County, including results of a recent evaluation. Conference on Child Language. Chicago, Nov., 1971.
- Intercultural Development Research Association. The AIR evaluation of the impact of ESEA Title VII Spanish/English bilingual education programs: An IDRA response with a summary by Dr. José Cárdenas, 1977. (ERIC Document Reproduction Service No. ED 151 435).
- Kincaid, G.L. Some factors affecting variations in the quality of students' writing. Unpublished doctoral dissertation, Michigan State University, 1953.
- Kjolseth, R. Bilingual programs in the United States: for assimilation or pluralism? In P.R. Turner (Ed.), Bilingualism in the Southwest. Tucson: University of Arizona Press, 1973.
- Kuhlman, N.A. Writing level competencies of Hispanic students. A paper at the American Educational Research Association, April, 1980. (ERIC Document Reproduction Service No. ED 186 202).
- Lambert, W.E. The effects of bilingualism on the individual: cognitive and sociocultural consequences. In P.A. Hornby (Ed.), Bilingualism: Psychological, sociological and educational implications. New York: Academic Press, 1977.
- Lambert, W.E., and R.C. Gardner. Attitudes and motivation in second-language learning. Rowley, Mass.: Newbury House Publishers, Inc., 1972.
- Lambert, W.E., H. Giles and O. Picard. Language attitudes in a French-American community. International Journal of the Sociology of Language, 1975, 4, 127-152.
- Lambert, W.E., and G.R. Tucker. The bilingual education of children: The St. Lambert experiment. Rowley, Mass.: Newbury House Publishers, Inc., 1972.
- Laosa, L.M. What languages do bilingual children use with whom? Research evidence and implications for education. March, 1975. (ERIC Document Reproduction Service No. ED 116 456).

- Lewis, H.P., and E.R. Lewis. Written language performance of sixth grade children of low SES from bilingual and from monolingual backgrounds. Journal of Experimental Education, 1965, 33(3), 237-242.
- Long, K.K., and A.M. Padilla. Evidence for bilingual antecedents of academic success in a group of Spanish-American college students. Unpublished research report, Western Washington State College, 1970.
- Lopez, D.E. The social consequences of Chicano home/school bilingualism. Social Problems, 1976, 24(2), 234-246.
- Mackey, W.F., and V.N. Beebe. Bilingual schools for a bicultural community: Miami's adaptation to Cuban refugees. Rowley, Mass.: Newbury House Publishers, Inc., 1977.
- Mackinnon, K.M. Language shift and education: Conservation of ethnolinguistic culture amongst school children of a Gaelic community. International Journal of the Sociology of Language, 1977, 6, 181-189.
- Macnamara, J. The bilingual's linguistic performance--A psycholinguistic overview. Journal of Social Issues, 1967, 23(2), 58-77.
- Merrill, C. Contrastive analysis and Chicano composition. A paper at the Conference on College English and Mexican-Americans, January, 1976. (ERIC Document Reproduction Service No. Ed 136 291).
- Miami High School. Reports from self-study in preparation for the 1978-79 evaluation by the Southern Association of Secondary Schools and Colleges. Miami, Fla., 1979.
- Nie, N.H., C.H. Hull, J.G. Jenkins, K. Steinbrenner and D.H. Bent. Statistical package for the social sciences. New York: McGraw-Hill, 1975.
- Noyes, E.S. Essay and objective tests in English. College Board Review, 1963, 49, 7-10.
- Ornstein, J. Relational bilingualism--a new approach to linguistic-cultural diversity and a Mexican-American case study. Ethnicity, 1978, 5(2), 148-166.
- Patella, V.M., and W.P. Kuvesky. Language patterns of Mexican-Americans: Are the ambitious un-Mexican? Paper presented at the Rural Sociological Society meeting, Washington, D.C., Aug., 1970.

- Paulston, C.B. Implications of language learning for language planning: Concerns in bilingual education. Arlington, Va.: Center for Applied Linguistics, 1974.
- Peal, W., and W.E. Lambert. The relationship of bilingualism to intelligence. Psychological Monographs, 1962, 76, 48-57.
- Plante, A.J. Connecticut pairing model proves effective in bilingual bicultural education. Phi Delta Kappan, 1977, 58(5), 427.
- Powills, J., R. Bowers and G. Conlan. Holistic essay scoring: an application of the model for the evaluation of writing ability and the measurement of growth in writing ability over time. Paper at the Annual Meeting of the American Educational Research Association, San Francisco, April, 1979. (ERIC Document Reproduction Service No. ED 174 679).
- Richardson, M.W. An evaluation of certain aspects of the academic achievement of elementary pupils in a bilingual program. Unpublished doctoral dissertation, University of Miami, 1968.
- Rosier, P., and M. Farella. Bilingual education at Rock Point-- Some early results. TESOL Quarterly, 1976, 10(4), 379-388.
- Santa Fe Public Schools. Longitudinal study, Title VII bilingual program, Santa Fe Public Schools. Santa Fe, New Mexico, 1978. (ERIC Document Reproduction Service No. ED 161 275).
- Saville, M., and R. Troike. A handbook for bilingual education. Washington, D.C.: TESOL, 1975.
- Shaw, F. Bilingual education: An idea whose time has come. Fall, 1975. (ERIC Document Reproduction Service No. ED 133 990).
- Smelstor, M. A guide to evaluating students' writing. Madison: University of Wisconsin, 1978. (ERIC Document Reproduction Service No. ED 162 524).
- Steele, J.M. The assessment of writing proficiency via qualitative ratings of writing samples. Paper presented at Annual Meeting of National Council on Measurement in Education, San Francisco, April, 1979. (ERIC Document Reproduction Service No. ED 175 994).
- Stoller, P. The language planning activities of the United States Office of Bilingual Education. International Journal of the Sociology of Language, 1976, 11, 45-60.

Troike, R. Research evidence for the effectiveness of bilingual education. Rosslyn, Va.: National Clearinghouse for Bilingual Education, 1978.

United States Congress, Senate, Special Subcommittee on Bilingual Education of the Committee on Labor and Public Welfare, Hearings on S. 428, 90th Congress, First Session, 18-31 May, 1967, 54.

Weinrich, U. Languages in contact: Findings and problems. The Hague: Mouton and Co., 1968.

White, E. Mass testing of individual writing: The California model. Journal of Basic Writing, 1978, 14, 18-38.

Zappert, L., and T. Cruz. Bilingual education: An appraisal of empirical research. Berkeley, Cal.: Bay Area Bilingual Education League, 1977. (ERIC Document Reproduction Service No. ED 153 758).

APPENDIX A  
LANGUAGE PROFICIENCY QUESTIONNAIRE

Directions: Please answer this questionnaire about yourself.  
Choose from the responses "yes", "a little" and  
"no".

1. Can you understand a conversation in Spanish? \_\_\_\_\_
2. Can you engage in an ordinary conversation  
in Spanish? \_\_\_\_\_
3. Can you read a newspaper in Spanish? \_\_\_\_\_
4. Can you write letters in Spanish? \_\_\_\_\_
5. Can you understand a conversation in English? \_\_\_\_\_
6. Can you engage in an ordinary conversation  
in English? \_\_\_\_\_
7. Can you read a newspaper in English? \_\_\_\_\_
8. Can you write letters in English? \_\_\_\_\_

APPENDIX B  
LANGUAGE USE QUESTIONNAIRE

Directions: Please answer this questionnaire about yourself.

Choose from the responses "Spanish", "English"  
and "Both".

1. What language do you use most frequently at home for conversations with adults? \_\_\_\_\_
2. What language do you use most frequently for conversations with children? \_\_\_\_\_
3. What language do you use most frequently to read books or newspapers at home? \_\_\_\_\_
4. What language do you commonly use at home for writing letters? \_\_\_\_\_
5. What language do you use most at work for conversation with fellow workers? \_\_\_\_\_
6. What language do you use most at work for conversation with the boss? \_\_\_\_\_
7. What language do you commonly use when talking to people of the same age in the neighborhood? \_\_\_\_\_
8. What language do you use at school? \_\_\_\_\_
9. What language do you like most for conversation with adults? \_\_\_\_\_
10. What language do you like most for conversation with children? \_\_\_\_\_
11. In what language does your priest or minister give the service when you attend church? \_\_\_\_\_



APPENDIX C  
DIRECTIONS FOR THE SPANISH ESSAY

The title of this essay is "La importancia de saber español e inglés" ("The Importance of Knowing Spanish and English"). You are to express your opinion as to whether it is important to be able to speak, read and write both Spanish and English.

Write the essay in Spanish if you can. If not, you may write it in English. The length should be about 150 words. You have forty minutes to complete it.

#### APPENDIX D

#### DIRECTIONS FOR THE ENGLISH ESSAY

The title of this essay is "The Importance of Knowing Spanish and English". You are to express your opinion as to whether it is important to be able to speak, read and write both Spanish and English.

Write the essay in English. The length should be about 150 words. You have forty minutes to complete it.

# APPENDIX E

## LANGUAGE ORIENTATION QUESTIONNAIRE

Directions: On parts A and B of this questionnaire you are asked if statements 1 through 7 are good or bad reasons for studying Spanish (in part A) or English (in part B). Place a check in the box corresponding to the answer you choose. On questions 8 through 10 in both parts place a check in the space following the answer you choose.

A. Is this a good reason for your children to learn Spanish?	very good reason	good reason	neither good nor bad	bad reason	very bad reason
1. It will help them to preserve their own native language and culture.					
2. It will someday be useful to them in getting a job.					
3. It will enable them to maintain friendships among Latin Americans.					
4. It will enable them to continue to think and behave as true Latin Americans.					
5. No one is really educated unless he is fluent in the Spanish language.					
6. It will allow them to meet and converse with more and varied people.					
7. They need it for some specific educational or business goal.					

8. How important is it for your children to be able to speak and understand Spanish?

Very important \_\_\_\_\_ Somewhat important \_\_\_\_\_ Not important \_\_\_\_\_

9. How important is it for your children to read Spanish?

Very important \_\_\_\_\_ Somewhat important \_\_\_\_\_ Not important \_\_\_\_\_

10. How important is it for your children to write in Spanish?

Very important \_\_\_\_\_ Somewhat important \_\_\_\_\_ Not important \_\_\_\_\_

	very good reason	good reason	neither good nor bad	bad reason	very bad reason
B. Is this a good reason for your children to learn English?					
1. It enables them to make friendships among Anglos?					
2. It will someday be useful to them in getting a job.					
3. They need a good knowledge of English to be respected by the Anglo community.					
4. It will enable them to think and behave as Anglos do.					
5. No one is really educated unless he is fluent in English.					
6. It will allow them to meet and converse with more and varied people.					
7. They need it for some specific educational or business goals.					

8. How important is it for your children to be able to speak and understand English?

Very important \_\_\_\_\_ Somewhat important \_\_\_\_\_ Not important \_\_\_\_\_

9. How important is it for your children to be able to read English?

Very important \_\_\_\_\_ Somewhat important \_\_\_\_\_ Not important \_\_\_\_\_

10. How important is it for your children to be able to write in English?

Very important \_\_\_\_\_ Somewhat important \_\_\_\_\_ Not important \_\_\_\_\_

APPENDIX F

PARENT PERMISSION IN ENGLISH

2450 S. W. 1st Street  
Miami, Florida 33135  
April 18, 1980

Dear Parent,

I am writing to you to ask your permission to have your son or daughter participate in a research project.

I am doing research at Miami Senior High for my dissertation in bilingual education. The purpose of the project is to investigate the effects of bilingual education on Spanish-speaking students. The results of this study could be very beneficial to the future of bilingual education in Dade County.

In order to do this research I will need your permission to have access to your son or daughter's permanent record. I need this in order to know what courses your son or daughter has taken through their years in school. The other way in which your son or daughter will be involved is that in one of their classes they will have two assignments which I will use with their classroom teacher.

If you agree to let your son or daughter participate in this project please sign the agreement below, tear it off and have your son/daughter return it to school as soon as possible.

Thank you very much for your assistance in this project.

Truly yours,

Dorothy Flores

-----  
PERMISSION FOR RELEASE OF  
INFORMATION FROM RECORDS

Student's Name: \_\_\_\_\_  
Date of Birth: \_\_\_\_\_

I agree that my son/daughter may participate in the educational research of Dorothy Flores. Also, the researcher has my permission to use my son's/daughter's permanent records.

\_\_\_\_\_  
Parent's Signature

APPENDIX G

PARENT PERMISSION IN SPANISH

2450 S. W. 1st Street  
Miami, Florida 33135  
April 18, 1981

Querido Padre,

Yo le estoy escribiendo a usted para pedir su permiso para que su hijo o hija participe en un proyecto de investigación en Miami Senior High.

Estoy trabajando en mi tesis en la educación bilingüe. El propósito de mi estudio es investigar los efectos de la educación bilingüe en los estudiantes que hablan español. Los resultados de este estudio pueden ser muy beneficiosos para el futuro de la educación bilingüe.

Al hacer mi investigación necesitaré su permiso para tener acceso a los records permanentes de su hijo o hija. Necesito estos para saber que cursos su hijo o hija ha tomado durante sus años de escuela. La otra manera en que su hijo o hija participará es que en una de sus clases ellos tendrán dos tareas que yo usaré junto con el profesor.

Si usted está de acuerdo en dejar a su hijo o hija participar en este proyecto por favor firme el acuerdo siguiente. Córtele y envíelo con su hijo o hija lo mas pronto posible.

Muchas gracias por su ayuda en este proyecto.

Sinceramenta,

Dorothy Flores

-----  
PERMISSION FOR RELEASE OF  
INFORMATION FROM RECORDS

Nombre de su hijo/hija \_\_\_\_\_

Yo estoy de acuerdo que mi hijo/hija pueda participar en la investigación educacional de Dorothy Flores. Y la investigadora tiene mi permiso para usar los records permenentes de mi hijo/hija.

\_\_\_\_\_  
Fecha

\_\_\_\_\_  
Firma de la madre o del padre

APPENDIX H

PERMISSION TO CONDUCT RESEARCH

# DADE COUNTY PUBLIC SCHOOLS

## ADMINISTRATIVE OFFICE LINDSEY HOPKINS BUILDING

1410 N.E. 2ND AVENUE MIAMI, FLORIDA 33132

J. L. JONES  
SIDENT OF SCHOOLS

DADE COUNTY SCHOOL BOARD  
MRS. PHYLLIS MILLER, CHAIRMAN  
MRS. ETHEL BECKHAM, VICE CHAIRMAN  
MR. G. HOLMES BRADDOCK  
MS. JOYCE H. KNOX  
MR. ROBERT RENICK  
DR. BEN SHEPPARD  
DR. LINTON J. TYLER

March 14, 1980

Ms. Dorothy J. Flores  
5791 S. W. 59 Street  
Miami, Florida 33143

Dear Ms. Flores:

The Educational Research Committee has approved your request to conduct the following research project within the Dade County Public Schools:

"A Study of Academic and Non-academic Outcomes of Spanish Language  
Origin Students in Bilingual School Programs and Regular School  
Programs in Dade County, Florida"

Approval to conduct such a research project is subject to the following conditions:

1. Participation by all subjects is strictly on a voluntary basis.
2. Written parental approval to participate must be secured for all subjects. The availability of completed parental approval forms for each subject must be verified by the school principal or his/her designee.
3. Written parental approval must also be secured for access to any pupil's cumulative folder. The Dade County Schools' form Permission for Release of Records and/or Information from Records must be utilized for this purpose. These forms are available at any Dade County school. The procedures for securing such a release are defined in the publication Student Educational Records, Dade County Public Schools, September, 1979, and must be conducted under the supervision of the principal or his/her designee.
4. Confidentiality of information for individual subjects must be maintained. Individual-identifying information must be destroyed at the conclusion of the study and must not be disclosed to a third party.

As with all Educational Research Committee actions, approval of your research study does not constitute endorsement by the school system. In addition, the decision concerning whether an individual school will participate or not is totally at the discretion of the school principal.



The Committee suggests very strongly that you provide Spanish versions of your questionnaires for parents and revise the format of the first questionnaire so as to provide more space for responses.

I wish you every success in your research endeavor.

Sincerely,

A handwritten signature in cursive script that reads "Horace L. Martin".

Horace L. Martin, Chairman  
Educational Research Committee

HLM:w

APPENDIX I  
DATA OF THE BISO GROUP

Stanford Achievement Test Scores in Reading

Grade Level	2	7	11	2	7	11
		34		45	65	
9	42	62		12	31	52
	23	32		25	31	55
	24	34		25	34	57
33	60	71		5	36	39
1	31	61				55
	45	56		4	26	41
	37	42		6	32	57
25		56			35	61
18	28	54		36	43	62
	26	67			32	53
	23	51		22	35	63
17	34	30			36	56
38	50	57			40	51
14	23	57			30	54
	36	39		5	24	31
16	25	50		9	23	50
10	30	51			34	69
29	36			16	23	53
	39	47		7	36	38
15		45			34	
25	34	61			40	51
16	32	44		36	38	67
14	22	43		12	44	67
23	44	55			28	53

Stanford Achievement Test Scores in Mathematics

Grade Level	2	7	11	2	7	11
		28	36	27	39	
		35	40	20	25	28
		14	15	34	32	38
		10	19	21	30	34
32	40	47		22	23	27
7	27	19			31	44
	34	41		53	16	22
	28	39		24	23	34
20	27	33			23	41
20	24	36		24	34	40
	36	41			22	37
	23	40		22	32	36
17		15			25	43
31	34	39			26	44
26	40	43				34
	22	41		16	14	18
26	30	28		28	15	38
18	20				29	41
	28	36		33	32	39
	32	37		16	23	39
20		19				33
24	31	40			29	28
33	28	38		21	27	38
16	19	33		25	26	46
30	24	35			26	26

Parents' Ratings on the Language Use Questionnaire

14	15
9	13
14	5
11	11
9	17
9	5
7	11
7	7
4	11
3	13
10	4
14	7
19	8
17	3
3	7
11	6
10	3
9	9
6	17
18	18
17	10
16	12
8	10
6	3
1	8



Students' Ratings on the Language Use Questionnaire

14	15
10	13
14	5
11	11
8	17
9	5
7	11
7	7
4	11
3	13
10	4
14	7
19	8
16	3
3	7
11	6
11	3
9	9
5	17
18	17
17	10
16	12
7	10
6	3
1	7

### Students' Ratings on the Language Proficiency Questionnaire



Scores on Essays in Spanish

3	3
3	2
2	2
2	1
3	4
	2
3	1
2	
1	2
2	2
3	3
4	1
3	3
3	3
4	3
3	4
4	2
3	2
2	1
2	3
2	3
2	3
2	2
2	2
1	2

Scores on Essays in English

2	3
1	2
3	2
2	3
3	4
	2
2	3
1	
1	2
2	2
2	4
2	1
3	4
2	3
3	2
2	3
3	2
4	3
3	3
3	1
2	2
3	1
2	3
2	3
2	2

English Section of the Language Orientation QuestionnaireNumbers of Students Who  
Chose Each Reason

Item	very good reason	good reason	neither good nor bad	bad reason	very bad reason
1	40	8	2	0	0
2	46	4	0	0	0
3	25	13	12	0	0
4	16	14	16	3	1
5	39	5	6	0	0
6	35	7	8	0	0
7	42	5	3	0	0

Spanish Section of the Language Orientation QuestionnaireNumbers of Students Who  
Chose Each Reason

Item	very good reason	good reason	neither good nor bad	bad reason	very bad reason
1	35	10	5	0	0
2	46	4	0	0	0
3	23	13	14	0	0
4	38	11	1	0	0
5	22	19	9	0	0
6	24	26	0	0	0
7	45	5	0	0	0

APPENDIX J

DATA OF THE COMPARISON GROUP

Stanford Achievement Test Scores in Reading

Grade Level	2	7	11	2	7	11
	27	49	46	23	28	63
		71	77	3	20	
	31	48	66	13	30	29
			35		44	50
	19	48	46		38	54
	31	40	52	37	41	56
		27	37			58
		30	43	43	54	62
	17	30	49	3	46	41
	15	41	47		52	46
	4	26	54	34	42	69
	18	31	40		26	46
		48	67		34	64
		25	48	23	46	53
	20	37			36	49
	20	39	54	10	30	49
		39	45	41	46	50
	10	36	42	43		
		30	35	19	42	48
		13	29		13	29
		25	20	19	28	30
		33	43		27	58
	22	56	73		23	36
		45	26		23	19
		31	39		30	26

Stanford Achievement Test Scores in Mathematics

Grade Level	2	7	11	2	7	11
	23	23	40	17	27	26
	4	17	30		34	42
	21	17	36	33	26	43
		29	24			27
		25	32	21	33	43
	32	26	37	19	29	36
			34		24	24
	42	41	45		18	29
	15	11	23	13	26	37
		8		22	24	24
	38	44	46	18	25	40
		32	38	6	32	40
		24	29		36	47
	28	32	44		28	25
			36	13	18	
	30	31	33	14	26	31
	19	31	34		31	28
	20	25	32	10	27	20
	41	30			11	25
		14	25		16	16
	15	31	20		26	17
		13	26		18	25
		21	18	33	37	46
		20	34		32	12
		48	26		16	14

Parents' Ratings on the Language Use Questionnaire

8	6
5	12
11	15
9	0
11	7
11	6
16	18
17	16
10	19
4	5
5	10
8	10
4	10
12	4
7	17
8	20
3	15
13	8
14	5
10	14
6	14
10	11
6	10
16	6
12	7





Students' Ratings on the Language Use Questionnaire

8	6
4	12
11	16
11	0
11	7
11	6
16	17
18	16
10	19
4	4
5	11
8	10
2	10
12	4
7	17
8	20
3	15
13	9
14	4
10	14
8	14
10	11
6	10
16	6
12	7

Students' Ratings on the Language Proficiency Questionnaire

8	6
8	8
7	8
8	8
8	7
8	8
8	8
8	8
8	8
8	8
8	8
8	8
8	8
6	8
8	8
8	8
7	8
5	8
8	7
8	8
8	7
8	8
8	8
8	8
8	8
8	8

Scores on Essays in Spanish

2	0
4	4
0	2
1	1
2	0
0	2
1	0
1	2
0	3
2	1
	1
2	2
0	2
4	3
1	3
0	1
0	1
2	0
3	2
1	0
1	3
2	
2	2
1	0
1	2

Scores on Essays in English

2	3
2	2
3	2
1	1
2	2
4	1
2	1
1	3
2	3
3	3
	2
2	2
3	3
2	3
2	4
1	2
3	1
1	3
3	2
2	3
3	2
2	
3	3
2	3
1	2

English Section of the Language Orientation QuestionnaireNumbers of Students Who  
Chose Each Reason

Item	very good reason	good reason	neither good nor bad	bad reason	very bad reason
1	44	6	0	0	0
2	45	5	0	0	0
3	28	11	11	0	0
4	17	11	17	0	5
5	39	3	8	0	0
6	39	6	5	0	0
7	39	7	4	0	0

Spanish Section of the Language Orientation Questionnaire

Numbers of Students Who  
Chose Each Reason

Item	very good reason	good reason	neither good nor bad	bad reason	very bad reason
1	33	7	10	0	0
2	44	6	0	0	0
3	22	17	11	0	0
4	36	7	7	0	0
5	19	18	13	0	0
6	28	21	1	0	0
7	40	9	0	1	0

## BIOGRAPHICAL SKETCH

Dorothy Jean Flores was born in Jacksonville, Florida, September 11, 1948. She was graduated from N.B. Forrest High School. She received a bachelor of arts degree in Spanish from Winthrop College in 1970. She earned a master of science degree in Spanish from the University of Seville in Spain and the State University of New York at New Paltz. She has taught Spanish and English as second languages in the United States and abroad.

In the fall of 1977 she was awarded a Title VII teacher trainer fellowship for three years. She received the degree of doctor of philosophy in curriculum and instruction from the University of Florida in March, 1981.

She is coordinator in curriculum and instruction at the South Atlantic Bilingual Education Service Center at Florida International University.

She is married to William B. Travis of Jacksonville, Florida.



I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



---

Clemens L. Hallman, Chairman  
Associate Professor of Subject  
Specialization Teacher Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



---

Allan F. Burns, Cochairman  
Assistant Professor of Anthropology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



---

Eugene A. Todd  
Professor of Subject Specialization  
Teacher Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



---

Ruthellen Crews  
Professor of Instructional Leadership  
and Support

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



---

Elroy Bolduc  
Professor of Subject Specialization  
Teacher Education

This dissertation was submitted to the Graduate Faculty of the Division of Curriculum and Instruction in the College of Education and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

March, 1981

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Dean for Graduate Studies and Research